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Federal Reclamation in Utah to 1974

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FEDERAL RECLAMATION IN UTAH TO 1974

by

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Glen Shagren

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INTRODUCTION

The Colorado River Basin of Utah covers approximately 49 percent of the state. A sizeable snowfall, particularly in the Uintah Mountains, makes Utah's major contribution to the water flow of the Colorado River. During the spring runoff the melting snow finds its way to the Colorado River, which eventually empties into the Gulf of Mexico. In large measure this water has held, and still holds, the key to Utah's development.

Because Utah lies in an arid region, water is an extremely important resource. Upon arrival to the Great Basin in 1847, the Mormon pioneers immediately set about solving the problem of diverting water from the streams of the area onto land. This was necessary to raise crops needed for their survival. Thus was begun the development of irrigation which along with being of extreme necessity became an important tradition in Utah.

As the population of the Great Basin continued to rise, it was found that demands on easily accessible water became too great for the existing supply. Cost was the greatest problem facing Utah's people in developing the potential of more inaccessible waters. Even with the formation of cooperative companies much of the water could not be utilized. The largest potential water source of all was the Colorado River Basin. But separating the larger population of the Great Basin

from that water were the Wasatch Mountains. Use of this water would necessitate diversion of it through tunnels from one Basin to the toher, a much too costly venture to be attempted privately. Those people who eventually settled in the Colorado Basin itself dount that natural stream flow was not sufficient to meet the needs of everyone.

Utah was not the only state in the arid west that saw a need for more water. Other states encountered the same problem of obtaining sufficient funds to build the larger projects which became needed after easily obtained water was used up. To help solve this problem, in 1902 the Federal Government passed the Reclamation Act, legislation of extreme significance. It is the purpose of this paper to show how the Reclamation Act affected the development of potential water in the Colorado River Basin for use by the people of Utah. Several projects were developed in Utah as a result of the passage of the Reclamation Act. This paper will discuss each project, emphasizing the need for building them, the actual building of them and the contributions made by each. The Colorado River is an inter-state stream which necessitated dividing its waters to guarantee a water supply to each state. Inter-state agreements of the Colorado River Basin water as they concern Utah will also be discussed.

The term reclamation has been avoided up to this point except in reference to the 1902 Act carrying that name, to avoid the possibility of confusing it with the term irrigation. Early movements for Federal participation in reclamation were led by "irrigationists" and without a doubt the Reclamation Act has been of great benefit to agricultural production. But is also true, especially in more recent years, that

reclamation has meant much more than irrigation. Production of electrical power is now a major aspect of many reclamation projects. Recreation has also become an important feature of reclamation. Large reservoirs resulting from the construction of huge dams on rivers and streams in the Colorado Basin have made good places for boating, fishing, water-skiing and camping. Thus a multiple benefit concept of reclamation has evolved. No longer is reclamation thought of only in terms of agriculture. Each of the benefits resulting from reclamation projects using Utah's Colorado River water will be discussed.

CHAPTER II

A CHANGE IN ATTITUDE, THE RECLAMATION ACT, 1902

The passage of the Reclamation Act in 1902 proved to be the turning point of reclamation in the arid west. The Act is commonly referred to as the Newlands Act since it was first sponsored by Senator Francis Newlands of Nevada.

Several Problems existed in gaining passage of the Act. The idea that the government had no right to provide money for essentially private matters was a major obstacle. Another factor was the difficulty in developing an interest in the West. Yet another was a complete lack of knowledge concerning climatic conditions in the arid country. Many believed that rainfall naturally followed the plow, or the railroad tracks. Some felt that if trees were planted in dry regions rainfall would come.[1]

A key year in destroying such myths was 1868. In that year, John Wesley Powell, a Civil War Veteran began investigations into what became the famous Powell explorations of the Green and Colorado Rivers. The explorations took place over a nine year period.[2] From these explorations Powell became aware of the relationship between the potential of the land and man's utilization of that potential. When he became

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[1] Walter Prescott Webb, The Great Plains (Boston: Ginn Company, 1931), pp. 378-79.

[2] Wallace Stegner, Beyond the Hundredth Meridian (Boston: Houghton Mifflin Company, 1954), p. 47.

aware of the problems of the west he willingly spoke out on them. In an 1874 speech to Congress, he presented facts concerning the limitations imposed upon the arid country by a lack of water.[3] By 1879 when he published his book The Report on Lands of the Arid Region of the United States, he had become a political force to be reckoned with. In this book Powell advocated drastic revisions of the Federal Statutes governing the settlement and development of Western public lands.[4] By all standards The Lands of the Arid Region must be considered a milestone in the history of reclamation in the West because it made available data on potential irrigation in the arid west.[5]

The most important political development resulting from Powell's work was the establishment of the Geological Survey in 1879. The Geological Survey, whose first director was Clarence King, led future explorations of western lands. In 1881 Powell became director of the Survey.[6] By 1888 irrigation had become a prominent sugject in political circles. Individuals finding existing land laws unsuited to arid conditions of the West pressured politicians for change. The Desert Land Act of 1877, which allowed settlers to claim more than the 160

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[3]William Culp Durrah, "Powell of the Colorado," Utah Historical Quarterly 27 (Fall, 1960):3.

[4]John Upton Terrill, The Man Who Rediscovered America (New York: Weybright and Talley, 1969), p. 3.

[5]Department of the Interior, U. S. Geological Survey, First Annual Report of the Reclamation Service (Washington: Government Printing Office, 1903), p. 24. Hereafter cited as simply Annual Report of the Reclamation Service preceded by the number and followed by the year.

[6]Ibid., p. 26.

acres permitted by the Homestead Act, encouraged speculation instead of helping the small farmer. By the Fiftieth Congress Senators William Stewart of Nevada and Henry M. Teller of Colorado as well as other members of the Senate had formed what became known as the "irrigation clique." Many had been elected to office because of their support for irrigation. On February 13, 1888, the Senate passed a resolution asking the Secretary of the Interior to report on the advisability of making a complete study of irrigable lands in the Arid West under the direction of the Geological Survey.[7]

This was the beginning of what became known as the "Powell Irrigation Survey." A resolution passed both Houses of Congress authorizing the Surveys March 20, 1888.[8] Partially because of opposition to the surveys by speculators and those who had interest in grazing in the West, and partially because Powell had a personal falling out with the "irrigation clique," the irrigation survey did not receive the funding necessary to sufficiently carry out its work. But some progress was made, and more importantly the survey helped to initiate much discussion of irrigation, and more than ever put the issue before the American people.[9] As a result of this increased awareness of the problem of water for irrigation in the arid west, the Senate passed a resolution

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[7] Stegner, Beyond the Hundredth Meridian, p. 300.

[8] First Annual Report of the Reclamation Service, 1903, p. 35.

[9] Ibid., p. 37.

on February 14, 1889 authorizing a committee of seven Senators to be known as the Select Committee on Irrigation and Reclamation of Arid Lands. Their purpose was to study irrigation and determine its potential in reclaiming arid regions. They met several times throughout the country between February and September, 1889, including a meeting in Salt Lake City.[10] From the large amount of information they received in their studies, they published a report which was highly publicized a and debated.

Thus interest in the arid West was greatly increased. Much had been done by 1889 to dispel the incorrect notions that once existed concerning the area. Not only was work being done on the government level, but private individuals as well took it upon themselves to promote irrigation movements. Perhaps the leader of these was William E. Smythe. Smythe began his "career" as a supporter of irrigation for arid regions while an editorial writer for The Omaha Bee in Omaha, Nebraska. Taking advantage of his position, Smythe wrote several articles and editorials expounding on the possibilities of irrigation in the west. He resigned his position from the paper and began publishing a periodical which he called the Irrigation Age in which he continued the crusade for bigger and better irrigation projects.[11]

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[10]Thomas Alexander, "John Wesley Powell, the Irrigation Survey, and the Inauguration of the Second Phase of Irrigation Development in Utah," Utah Historical Quarterly 37 (Winter 1969):198-99. The complete text of the Select Committee on Irrigation and Reclamation of Arid Lands, known as the "Stewart Report" can be found in U. S. Congress, Senate, Report of the Special Committee of the U. S. Senate on the Irrigation and Reclamation of Arid Lands, S. Rept. 98, vol II, 51st Cong., 1st sess., 1890.

[11]William E. Smythe, The Conquest of Arid America (New York: The McMillan Company, 1905), pp. 266-67.

Because of interest generated by Smythe and others, it was decided by supporters of the "irrigation movement" to create a National Irrigation Congress. The first meeting of this Congress was held in Salt Lake City from September 15 to 17, 1890. It is interesting to note that the first Irrigation Congress recommended that lands should be granted in trust to the various states and territories which would be responsible for developing irrigation projects.[12] This is a clear indication that Federal participation in providing funds for irrigation was still considered too controversial. However in the next Irrigation Congress held in Los Angeles in October, 1893, Federal involvement was discussed. The point was stressed that rivers rising in one state and flowing through others made the control of waters of such rivers a Federal problem. A delegate to the convention, Lionel A. Sheldon, aroused much enthusiasm at the convention when he declared that in his opinion arid lands would never be reclaimed until the nation itself built the reservoirs and canals for irrigation. The keynote of the 1893 convention was "the irrigation question is national in its essence." This was certainly a different attitude than was seen in the first convention, although most of the delegates in Los Angeles saw Sheldon's idea as a bit premature. Recognizing that there would be much public opinion against such an idea.[13]

Subsequent Irrigation Congresses were held in various cities in the country, annually until 1900 and periodically after that time.

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[12]William E. Smythe, "The Irrigation Idea and Its Coming Congress," Review of Reviews, October 1893, p. 395.

[13]Smythe, The Conquest of Arid America, p. 269.

In the meantime George H. Maxwell, a California lawyer, helped establish the National Irrigation Association. Maxwell became the director of the organization, and with C. B. Boothe, a wealthy Los Angeles merchant organized a campaign to obtain funds from industrial and transportation interests who stood to gain from the development of the West. The National Irrigation Association worked the entire year stirring up interest in irrigation and was very successful in obtaining funds which were used to print and disseminate materials designed to educate and inform the general public on the problems of the arid west. They became strong backers of the movement to get Federal involvement in developing irrigation projects.[14]

A partial measurement of the success of the irrigation movement can be found in the platforms of the major political parties for the election year 1900. Because the movement was getting widespread exposure in the press, and because it was becoming a matter of increased discussion in Congress, it became apparent to politicians that it would be beneficial to their parties to somehow express an interest in the development of the west. Thus the Republican platform in 1900 stated, "We recommend adequate national legislation to reclaim the arid lands of the United States ..." The Democrats' platform in the same year stated: "We favor an intelligent system of improving the arid lands of the west, storing the waters for the purposes of irrigation and holding of such lands for actual settlers." The strong Silver Republican Party of that year strongly urged the "... General Government to

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[14] Ibid., p. 272.

provide for the construction of storage reservoirs and irrigation works."[15]

Part of the reason for the new emphasis put on the involvement by the Federal government in the irrigation movement was the general failure of the 1894 Carey Act. This act was passed by Congress with the intent of turning public lands over to the various states in the arid region, which would in turn take the necessary steps to make them productive. Except in a few areas this was not successful. The states were generally unable to supply the necessary capital to fund large reclamation projects.[16] In Utah it was estimated that at the time of passage of the Carey Act 600,000 to 700,000 acres of fertile land were still reclaimable.[17] But reclamation under the Carey Act was limited in most states.[18] With the failure of the states to adequately develop reclaimable land, it became all the more obvious that Federal help was needed.

The most important leader of Congress in the movement for Federal legislation for reclamation was Representative Francis G. Newlands of Nevada. Newlands was later to be elected to the Senate. On January 26, 1901 he introduced the first of a series of measures, later known as the Newlands Bill, which would call for the establishment of a fund for

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[15] First Annual Report of the Reclamation Service, 1903, p. 40.

[16] George Clyde, "History of Irrigation in Utah," Utah Historical Quarterly 27 (Spring 1959):32.

[17] George Thomas, Development of Institutions Under Irrigation with Special Reference to Early Utah Conditions (New York: The McMillan Company, 1920), p. 245.

[18] Department of Commerce, Bureau of Census, Fourteenth Census of the United States, Taken in the Year 1920, vol. 7, Irrigation and Drainage (Washington, Government Printing Office, 1922), p. 306.

reclamation of land in the arid west. He proposed that money for this fund would come from the sale of public land. It was to be put at the disposal of the Secretary of the Interior and was to be used not only for making investigations of possible reclaimable areas, but also for actual construction of reservoirs and canals necessary for irrigation.[19] The introduction of this measure by Representative Newlands was certainly not met with unanimous support. It initiated heated debate on whether or not development of agriculture was necessary. Most leaders east of the Mississippi felt that to develop western agriculture would create unique competition to farms in the east. Representative Joseph C. Sibley of Pennsylvania, debating the issue on the floor of the House of Representatives best summed up this argument when he stated, "To my mind the proposition for the immediate reclamation of these arid lands is the pressing of the poisoned chalice to the lips of the farming class of this nation."[20]

Easterners opposed to the use of the general fund for reclamation purposes were somewhat quieted when the Newlands Bill proposed the use of money from the sale of public lands. Many, however, rejected Newlands' proposal on the grounds that public lands were the property of the nation and that funds derived from their sale belonged to all. To them the use of those funds for the purpose of reclamation was taking money that could be used in the east. Many also argued that using Federal funds to aid private parties was unconstitutional.[21]

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[19] Smythe, The Conquest of Arid America, pp. 276-77.

[20] U. S. Congress, Congressional Record, 57th Cong., 1st sess., p. 837.

[21] Smythe, Conquest of Arid America, pp. 266-67.

Others strongly supported Newlands' Bill. Frederick Newell, hydrographer for the Geological Survey reported to Congress very favorable findings on potential irrigation development in the west, as did Dr. Elwood Mead, irrigation expert of the Department of Agriculture. Mead later became Commissioner of the Reclamation Service.[22] Lieutenant-Colonel Hiram Chittendon who had made extensive surveys in the west and who published a report called "Reservoirs of the Arid Region" was also a strong supporter of Federal aid in developing western irrigation. He maintained that the government "... could properly undertake works and develop them to their fullest potential that would be ruinous to the individual."[23]

Utah as a state that would benefit from any support of irrigation by the Federal Government showed strong support for the Newlands Bill. At the height of the debate in Congress on the Bill, the Utah State Legislature in 1901 addressed a memorial to the Congress of the United States to aid,

> ... in the reclamation of Arid America, in order that settlers might build homes on the public domain, and to that end we urge upon the Congress of the United States that national appropriations commensurate with the magnitude of the problem should be made for the construction by the National Government as part of its policy of internal improvement of storage and other works, for flood protection and to save for use in aid aid of navigation and irrigation the waters which now run to waste.[24]

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[22]Alfred B. Golze, Reclamation in the United States (Caldwell, Idaho: The Caxton Printers, Ltd., 1961), p. 24.

[23]Hiram M. Chittendon, "Government Construction of Reservoirs in Arid Regions," North American Review (February, 1902), pp. 250-52.

[24]U. S. Congress, Congressional Record, 56th Cong., 2d sess., vol. 34, p. 2802.

This memorial was signed by the President of the Senate A. J. Evans, Speaker of the House, William Glassman, and Governor Heber M. Wells. The Ogden Examiner ran several editorials in support of the Newlands Bill.[25]

President Theodore Roosevelt played a significant role in support of the Newlands Bill. As early as December 3, 1901, shortly after he became president, Roosevelt made a speech in which he pledged to work for the bill's passage. He strongly endorsed Federal aid to the development of irrigation projects.[26]

Finally with the support of Roosevelt, and several western congressment who had convinced many of their colleagues to support it, the bill passed both houses of the legislature. President Roosevelt signed it into law on June 17, 1902.

The Reclamation Act, as the law became known, authorized the survey and construction of irrigation works necessary to reclaim public lands. To fund the surveys and construction, all monies from the sale of public lands in the sixteen western states was to be put at the disposal of the Secretary of the Interior. Money however was not to be apportioned for construction until the Department of Interior judged a proposed irrigation project to be feasible, both from a financial and engineering standpoint. At the discretion of the Secretary of Interior, lands situated within a project declared feasible were to be withdrawn

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[25] Ogden Examiner, 12 February 1902, p. 4; 3 May 1902, p. 4; 9 May 1902, p. 4; 12 June 1902, p. 4.

[26] Smythe, The Conquest of Arid America, p. 283.

from public entry, as were lands deemed necessary for reservoirs and canals. The Act also called for a repayment of construction costs to the government to be pre-rated among the land owners using project water. The length of time for repayment was originally set at ten years, but this had since been modified. A key aspect of the law made water rights appurtenant to the lands. Unoccupied land could be settled in project areas only under terms of the Homestead Act of 1862, thus fixing a maximum of 160 acres of previously unoccupied land per settler. Also of great importance as a result of the Newlands or Reclamation Act was the establishment of the Reclamation Service, later the Bureau of Reclamation, which played such an important role in the later reclamation projects themselves.[27]

Utah anticipated much from the new act. In his message to the state legislature January 13, 1903, Governor Heber M. Wells expressed optimism for the future of the state because of the Reclamation Act. He stated:

> The firm and friendly attitude of the President on this great question was supported in a most gratifying manner by the National Legislature, the result being that possible ties for the future of the dry region are immediately opened up before us to an extent hardly dreamed of before. We cannot too soon place our state in a position to realize the benefits of these laws. As the birthplace of American Irrigation and its most prosperous home, Utah should be one of the first to extend cordial recognition to the general government for its proffer of aid, and make its self at once ready to utilize the fullest extent of the opportunities now afforded.[28]

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[27] A full text of the Reclamation Act of 1902 is found in The First Annual Report of the Reclamation Service, 1903, pp. 61-63.

[28] Heber M. Wells, "Annual Message to the Legislature," Public Documents State of Utah, 1903, p. 11.

It was only a short time before the governor's hopes were realized when in 1906 construction of the Strawberry Valley Project was authorized. This was Utah's first Federal reclamation project, and the first which tapped the potential of the Colorado River Basin.

CHAPTER III

THE STRAWBERRY VALLEY PROJECT

The Strawberry Valley Project marked the beginning of Federal aid to Utah for reclamation. It was the first Federal project in Utah which put to use waters of the Colorado River Basin, as well as being the first project which diverted those waters to the Great Basin. By 1851 the Mormon pioneers had begun using the Spanish Fork River and smaller streams for irrigating lands in the Southern Utah Valley. Since water supply depended on snowfall in the mountains, an adequate supply of water was not always available. This severely limited the types of crops that could be raised in that section of the Great Basin.[1] It is commonly believed that Henry Gardner, a state senator, and his friend John S. Lewis made a summer outing to the Strawberry Valley area in the year 1900 and on this outing the idea of creating a reservoir in the Strawberry area and diverting the water from it to Utah Valley was formed.[2]

Preliminary investigations were made in 1902 under the leadership of the Spanish Fork East Bench Irrigation and Manufacturing Company. Promoters such as Senator Gardner and interested persons from the

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[1]Thomas Alexander, "An Investment in Progress: Utah's First Federal Reclamation Project, The Strawberry Valley Project, Utah Historical Quarterly 39 (Summer, 1971):289.

[2]Bureau of Reclamation, Region IV, Reclamation Accomplishments, The Strawberry Valley Project Utah (Salt Lake, 1958), p. 5.

towns of Spanish Fork and Payson also joined in early investigations.[3] An engineer was hired for the purpose of checking the feasibility of the project and the costs associated with it. He found that the cost would be so great that the project could not be completed without outside aid. Thus in January 1903 a committee was organized to seek aid from the Reclamation Service in hopes that it would help in investigating the proposed Strawberry Project.[4]

The Reclamation Service began its investigations in 1903. In 1904 the reports from the Service indicated that conditions along Strawberry Creek offered a fine site for a storage facility. Near the upper reaches of the Valley at an elevation of 7500 feet, Strawberry Creek passes through a flat valley of several thousand acres, and at the lower end passes through a narrow canyon. The 1904 investigation by the Reclamation Service also identified the necessary features for the tunnel, including the proposed dam and diversion tunnel.[5] In January, 1905 about 1200 citizens, who owned approximately 26,000 acres of land in the vicinity of Spanish Fork, petitioned the Reclamation Service for further consideration of the Strawberry Project. The petitioners agreed to comply with the provisions o f the Reclamation Act, and were willing to make agreements regarding repayment of construction costs. On August 14, 1905 a board of engineers consisting of

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[3] Alexander, "An Investment in Progress," p. 289.

[4] Ibid.

[5] Third Annual Report of the Reclamation Service, 1905, p. 239.

H. N. Savage, W. H. Sanders, A. J. Wiley, J. H. Quinton and G. L. Swendson reported the project to be feasible and recommended that it be constructed at the earliest possible date. The main features of the project were to be Strawberry Dam, and a tunnel through the Wasatch range connecting the reservoir behind the dam with a system of canals carrying the water to lands of the southern part of Utah Valley.[6]

A water users association was formed and on December 15, 1905 Secretary of the Interior Ethan A. Hitchcock apparoved the project and set aside $150,000 from the reclamation fund to begin construction.[7] During the Summer and Fall of 1906 a wagon road 30 miles in length was built extending from Diamond Switch, the Reclamation Service shipping point on the Denver and Rio Grande Railway, to both portals of the proposed tunnel. The road followed Diamond Fork Canyon and was to be used to service the work crews which began preliminary work for the tunnel in August, 1906.[8] Fourteen small bridges were built along the road, with most of the work done on this portion of the project by men and teams of horses from the surrounding area.[9] Work was started at the west portal of the tunnel in September 1906 and continued until heavy snows in December forced crews to quit work because supplies could not be brought to the area over snow-clogged roads. In the Spring when the snow finally began to melt, large portions of the road

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[6] Ninth Annual Report of the Reclamation Service, 1911, p. 268.

[7] Alexander, "An Investment in Progress," p. 290.

[8] Ibid., p. 292.

[9] Ninth Annual Report of the Reclamation Service, 1911, p. 270.

in Diamond Fork Canyon were washed out. It was necessary to keep a foreman and a gang of men working constantly to keep the road in repair. When work finally began on the tunnel, two shifts per day were used, working from the west to the east portal. The labor used in drilling the tunnel came from several small towns in the area and from various mining districts of the state. The workers were described as first class.[10]

Work on the tunnel was suspended on June 20, 1907 to await the completion of an important feature of the project, the hydro-electric power plant located about three miles from the town of Spanish Fork. Thus early in Utah's history of Federal Reclamation, production of electric power was carried out as an additional benefit. A three mile canal diverting water from Spanish Fork River to the power plant was built, as was a small diversion dam which diverted water to the tunnel. The power plant itself contained two 450 kilowatt generators and two 600 horsepower turbine water wheels. On December 13, 1908, the plant was put into operation, with the electricity at first to be used to provide power to drill the rest of the tunnel.[11] Work was then resumed on the tunnel and by June 30, 1911, 11,933 feet had been excavated and 6,896 feet lined with concrete. Material was moved out of the tunnel by electric locomotive and two yard capacity muck cars. The cars were unloaded at the dump site by an electrically operated 7-1/2 ton derrick. Three and a quarter inch Sullivan rock drills were used to break up the

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[10] Ibid., p. 279.

[11] Sixth Annual Report of the Reclamation Service, 1908, pp. 217-22.

rock in the tunnel. Most of the rock encountered was classified as medium limestone and thus not too difficult to drill.[12] The east portal of the tunnel was opened in October, 1911, with material removed from that end in trams hauled by mules.[13] By November, 1912 the entire 3.8 mile long tunnel was holed through and lined with cement.[14]

In 1910 work was begun to construct camp buildings. On June 18, 1911 actual construction of the dam was launched. On September 13, 1913 the east gates of the tunnel were opened connecting the waters of the Colorado Basin and Utah Valley.[15]

Water diverted through the tunnel from Strawberry Reservoir went directly into Diamond Fork Creek, a tributary of Spanish Fork River. From Spanish Fork River it was diverted into four existing canals in the area that had been used for irrigation before the Strawberry Project. In 1915 a new Highline Canal was constructed which extended from the power canal to Payson Creek, a distance of 17.5 miles. Another new canal, the Mappleton-Springfield Canal, running in a northerly direction for 6.7 miles, was built in 1918.[16] In 1934 the last of the project features was built, it being a 4.7 mile feeder canal from Currant Creek to Co-op Creek, a tributary of Strawberry River

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[12] Eighth Annual Report of the Reclamation Service, 1910, p. 185.

[13] Eleventh Annual Report of the Reclamation Service, 1813, p. 172.

[14] Twelfth Annual Report of the Reclamation Service, 1914, p. 214.

[15] Thirteenth Annual Report of the Reclamation Service, 1915, p. 272.

[16] Alexander, "Investment in Progress," pp. 293-94; and the Fifteenth Annual Report of the Reclamation Service, p. 412.

producing a larger flow into the Reservoir. Total cost of the project was $3,348,684.[17]

One of the problems encountered on the project was related to payment to the government of construction costs. Part of the difficulty was that many farmers in the area already had vested water rights in their possession before the Strawberry Project was begun and were not willing to unify these pre-existing holdings with the Strawberry Water users, who had contracted in 1906 to repay the government. Utah Senator Reed Smoot helped to iron out this problem in 1915 when it was agreed that the landowners in the northern half of the project with pre-existing water rights agreed to pay $45 per acre foot for project water and allowing them to keep their existing rights to water.[18] This was actually made possible by an Act of Congress on February 21, 1911 known as the Warren Act which allowed the Secretary of Interior to see water from Federal projects where amounts of water were above those necessary to fulfill the needs of newly reclaimed lands.[19]

In 1923, Secretary of the Interior Hubert Work appointed a Fact Finders Committee to make a thorough investigation into the problems that were being encountered on reclamation projects. John A. Widtsoe of Utah was a member of this committee and became its secretary.[20] This committee was to have far reaching effects on the Strawberry Project,

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[17] U. S. Department of the Interior, Bureau of Reclamation, Reclamation Project Data, 1961 (Washington: Government Printing Office, 1962), p. 731.

[18] Alexander, "Investment in Progress," p. 298.

[19] Golze, Reclamation in the United States, p. 66.

[20] William I. Palmer, Personal interview with author, March 6, 1973.

especially in its recommendations concerning repayment to the government of construction costs. Because of these recommendations Congress pass an Act known as the Deficiency Act on December 5, 1924.[21] The purpose of the Act was to set up a system of repayment whereby the user of Federal project water repaid the government on an individual basis, based on the ability of his land to produce crops. In September, 1926 the Strawberry Water Users Association was formed and it signed a contract with the United States to take over repayment based on the new system.[22] By January 1, 1969 the Strawberry Water Association had repaid the government all but $39,361.69 of the original cost of construction.[23]

From a financial standpoint, the project has proved a success. The original costs are almost repaid and increased revenue from taxes of farmers' income has in itself benefitted the government. The assessed valuation of the southern part of Utah County jumped from $6,271,000 in 1911 to $30,558,000 in 1920 with much of the increase attributable to the Strawberry Project.[24] Obviously this has helped the state's finances as well.

From an agricultural standpoint the project has been a great success. Mr. Caleb Tanner, former state engineer, in a speech to the Utah Irrigation and Drainage Conference showed how desperately in need

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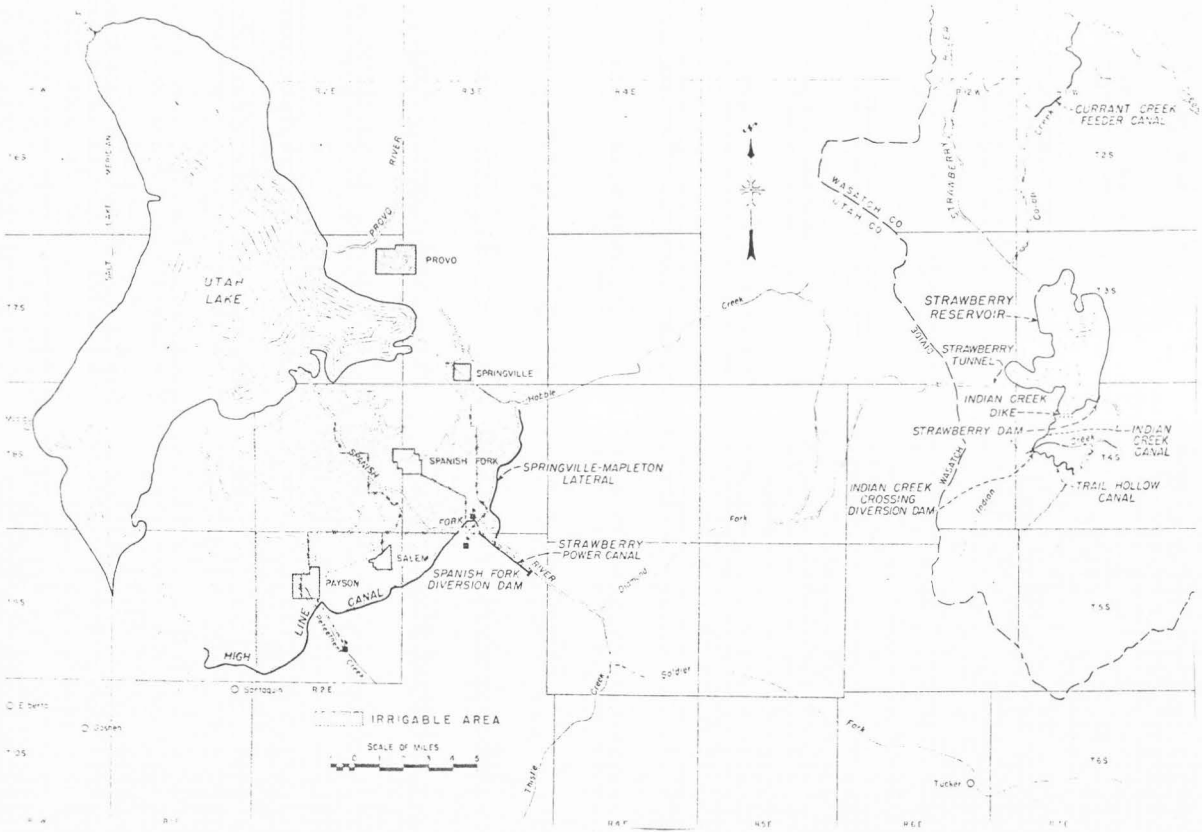
[21]Golze, Reclamation in the United States, pp. 28-29.

[22]Bureau of Reclamation, Reclamation Accomplishments, p. 7.

[23]Alexander, "Investment in Progress," P. 299.

[24]Jay B. Bingham, "Reclamation and the Colorado," Utah Historical Quarterly 28 (Summer, 1960):237.

Figure 1. Strawberry Valley project. Map from Department of the Interior Reclamation Project Data, 1961.


UTAH LAKE
PROVO
SPRINGVILLE
SPANISH FORK
SPRINGVILLE-MAPLETON LATERAL
SALEM
PAYSON CANAL
SPANISH FORK DIVERSION DAM
STRAWBERRY POWER CANAL
HIGH LINE CANAL
CURRANT CREEK FEEDER CANAL
STRAWBERRY RESERVOIR
STRAWBERRY TUNNEL
INDIAN CREEK DIKE
STRAWBERRY DAM
INDIAN CREEK CANAL
INDIAN CREEK CROSSING DIVERSION DAM
TRAIL HOLLOW CANAL
IRRIGABLE AREA
SCALE OF MILES
Provo River
Spanish Fork River
Diamond Fork
Soldier Creek
Indian Creek
Strawberry River
Current Creek
Wasatch Co.
Utah Co.
Tucker

of water the farmers in the Southern Utah Valley had been. He reported personally observing the small amount of water in Spanish Fork River and stated that before the Strawberry Valley Project the area was in "... the very throes of disaster."[25] The project itself irrigates approximately 48,000 acres, 16,000 of which were private lands which had previously not been irrigated and 3,500 acres which became new farms in the area. The rest of the land irrigated received a supplemental supply, already having been irrigated to some extent previous to 1906.[26] Before the project, dry lands in the area sold for $25 per acre. After project water reached these lands they rented for $30 per acre per year. Sugar beets became an important crop on the newly irrigated land, with three new sugar beet factories built in the area after the completion of the project. Alfalfa and other varieties of hay were and still are important crops in the area, as are potatoes and wheat. Fruits such as raspberries, cherries, peaches and apples are also grown.[27] Besides potatoes, truck crops such as sweet corn, peas and Tomatoes can be and have been grown.[28]

Agriculture was not the only benefit of the Strawberry Project. Mention has been made of the power plant which was built to help in the drilling of Strawberry Tunnel. This power plant now provides power for

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[25]Speech by Caleb Tanner to the Third Annual Utah Irrigation and Drainage Conference, Ogden, Utah, January 1919, in Inception, Organization, Proceedings of the Utah Irrigation and Drainage Congress for Years 1917-1920 (Salt Lake; 1920), p. 74.

[26]Bureau of Reclamation, Reclamation Accomplishments, p. 6.

[27]Thomas, Developments of Institutions of Irrigation, p. 262.

[28]U. S. Department of Interior, Water and Land Resources Accomplishments, 1969, Statistical Appendix (Washington: Government Printing Office, 1970), pp. 130-31.

several towns in the area. Although certainly not a large plant in comparison to some of those built more recently, it was a start in the direction of making reclamation projects serve more than one purpose. In fact the power plant built in connection with the Strawberry Project was one of the first built by the Bureau of Reclamation.[29] Recreational opportunities have been another benefit of Strawberry. Shortly after the reservoir filled with water it was stocked with fish from state hatcheries. By 1955 four campsites and 60 public cabins were available for use. From 1955 to 1968 great gains were made in the recreational use of the reservoir area. An estimated 20,000 people fished there on the opening day of fishing season in 1968.[30]

Judging from these benefits, the Strawberry Valley Project can definitely be termed successful for the people of Utah. The 1902 Reclamation Act made possible the use of Colorado River Basin waters, and was the turning point in future Federal reclamation projects which put to further use the waters of the Colorado Basin in Utah.

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[29] Alexander, "Investment in Progress," p. 303.

[30] Ibid., p. 304.

CHAPTER IV

CONTROVERSY: DIVIDING THE WATERS

It was not until the 1930's that another Federal project was started in Utah's Colorado River Basin. Part of the reason for this was that Federal reclamation was a relatively new concept. Many projects had been started in several states, and as often happens with anything previously untried, problems arose. One lay in the difficulties many projects has repaying the government for costs of construction. W. R. Wallace, Chairman of the Utah Water Rights Commission pointed out that some areas, unlike the Strawberry Valley project where much of the land was already settled, were having problems getting new settlers to the land.[1] Factors external to the Bureau of Reclamation such as the United States' involvement in World War I and the poor economic situation of the 1920's and 1930's no doubt played a role in delaying future projects.

Yet during this lull in development, a controversy arose concerning the use of waters of the Colorado River. This controversy was directly related to the huge size of the Colorado Basin, which has a total area of approximately 244,000 square miles and lies in seven different states of the Rocky Mountain area and the Southwest.[2] This huge

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[1] Address by W. R. Wallace to the Second Annual Conference on Irrigation and Drainage, at Utah Agricultural College, 24 January 1918, reprinted in Inception, Organization, Proceedings, 1917-1920, p. 36.

[2] E. L. Hampton, "Seven State Irrigation Treaty with Text," Current History Magazine 17 (March, 1923):994.

basin lies totally within the arid region which naturally makes the rights to use of the water in the basin very important. The argument between Colorado River Basin states over the division of its waters had been brewing for several years. The confusion over inter-state water rights was to play the major role in bringing representatives of the Colorado Basin states together to iron out a division of Colorado River water.[3]

It is not the purpose of this paper to fully investigate the evolution of water rights in the West, but because of its importance to the problem confronting the Colorado River Basin states a short discussion of water rights in the West is necessary. Farmers east of the Mississippi River, which like England has abundant rainfall, easily adapted to the English Common Law of waters which was brought to this country during Colonial times. This law was based upon what is known as riparian rights, which an individual gains by owning the bank of a stream thus having access to the water in that stream because of his position along it.[4] Those people who live any distance from the stream have no rights to it. The problems becomes obvious if this system were to be used in the arid west. Only those lands owned near a stream bed could be irrigated since only that land would have rights to the water.

Because of the dry climate in the arid region of the West, some modifications had to be made. California modified the English common

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[3] Ibid., p. 995.

[4] Walter Prescott Webb, The Great Plains (Boston: Ginn Company, 1931), pp. 432-33.

law and the other six states of the Colorado Basin completely eliminated it. In its place was established the Doctrine of Prior Appropriation.[5] Individuals who first use the water in a particular area gained the rights to that water forever. This then became the crux of the argument between the states concerning the use of the Colorado River. If, in fact, the doctrine of prior appropriation could be applied to an entire basin in the same manner that it applied to a particular state, the lower basin would have gained the rights to the Colorado River water simply because it was developing so much more rapidly than was the upper basin. After 1900, large numbers of people had moved into California and Arizona, while population remained small in Wyoming, Utah, Colorado and New Mexico. Ironically it was in the upper basin states that 87 percent of the Colorado Rivers waters was produced.[6]

This problem was made all the more interesting to the states concerned due to the fact that no one was sure of the legal status of streams flowing through more than one state. Obviously the upper basin states were threatened if rights by prior appropriation were granted. On the other hand the lower basin states felt threatened if prior appropriation did not apply, since if the upper states should be allowed to eventually develop the large water supply in the upper basin, the lower states would be left with an insufficient amount of water for their already developed areas. Since 1911 the Supreme Court had before it a case known as Wyoming versus Colorado which dealt with this very

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[5] Ibid., p. 439.

[6] Hampton, "Seven State Irrigation Treaty," p. 994.

problem. Wyoming had brought suit against Colorado to prevent a proposed diversion of Laramie River, an interstate stream, on the grounds that she had rights by prior appropriation.[7]

While the court pondered its decision on this case, the states began a movement to try to reach agreement on the controversy. In January, 1919 a conference was initiated by Governor Simon Bamberger of Utah which included representatives of all seven of the Colorado Basin states to discuss the Colorado River system and the problems related to the development of it. At this first conference it was decided that a permanent organization was needed. The organization formed as a result was the League of the Southwest which was to play an influential part in promoting discussion and cooperation in dealing with basin problems.[8] Delph Carpenter, a lawyer who was the Water Commissioner for the State of Colorado, was one of the first individuals to suggest an agreement between the states to end the years of controversy over waters of the Colorado.[9] Each of the states began to see the necessity of doing something to insure its rights to those waters. Thus each of the state legislatures began to work on passing enabling acts asking Congress for the necessary permission to enter into an interstate compact. By May, 1921, Congress gave its consent. The governors of the states were given the authority to appoint representatives from their

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[7] Revel L. Olson, The Colorado River Compact (Cambridge, Massachusetts: Published by the author, 1926), p. 76.

[8] Ibid., pp. 12-13.

[9] Norris Hundley Jr., Dividing the Water (Los Angeles: University of California Press, 1966), p. 48.

states to attend upcoming meetings in which an agreement was to be made.[10] The body of representatives which met to iron out the problems of dividing waters of the Colorado River was known as the Colorado River Commission. R. E. Caldwell was appointed to represent the state of Utah. John A. Widtsoe was appointed as his advisor.[11] Secretary of Commerce Herbert Hoover was appointed to represent the United States and was elected by the delegates from the states to be chairman.[12]

Just as the Colorado River Commission became deeply involved in argument and discussion relative to settling their problems, the Supreme Court acted on the Wyoming versus Colorado case. Thus, in a decision handed down in June, 1922, the Court ruled in favor of Wyoming. In essence the Court determined that in any case concerning interstate streams, where each of the states recognized the doctrine of prior appropriation, that doctrine was to apply in determining which should have rights to the water in question.[13] Thus because of it the seven states of the Colorado Basin accepted basically the doctrine of prior appropriation (California's laws are somewhat different), the Court's decision had settled the question of water rights concerning the Colorado River. In the process it confirmed what many in the upper basin had previously feared.[14]

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[10] Olson, The Colorado River Compact, pp. 71-72.

[11] John A. Widtsoe, "A Journal of John A. Widtsoe," Utah Historical Quarterly 23 (Summer, 1965):195.

[12] Colorado River Commission, "Minutes and REcords of Sessions Nineteen Through Twenty Seven of the Colorado River Commission Negotiating the Colorado River Compact," p. 4. (Unpublished)

[13] Hampton, "Seven State Irrigation Treaty," pp. 995-996.

[14] Olson, The Colorado River Compact, p. 76.

The Court's decision was to play an important role in later discussions of the Commission. It made Delph Carpenter and his colleagues of the upper basin more strongly opposed to all reclamation of the lower basin until a compact was agreed upon. What the decision basically did was to create a race between the states to see who could develop its area faster. Carpenter best expressed the Wyoming versus Colorado decision by stating that it:

> ... leaves the western states to a rivalry and a contest of speed for future development. The upper state has but one alternative, that of using every means to retard development in the lower state until the uses within the upper state have reached their maximum. The states may avoid this unfortunate situation by determining their respective rights by interstate compact before further development in either state, thus permitting freedom of development in the lower state without injury to the future growth of the upper.[15]

One thing the upper states had in their favor was the desire of the lower states for dams on the Colorado which could store water to prevent floods that plagued the lower basin each year during the spring run-off. As long as no agreement was reached on dividing the water among the states, the upper basin could refuse to support these storage dams. The upper states argued that storage of water in, for instance, the Flaming Gorge reservoir (which was mentioned as early as 1921) would do little good to citizens in the upper states since under the doctrine of prior appropriation there was slim chance that their citizens would ever be able to use the water from it.[16]

The major problem therefore facing the Colorado River Commission in coming to an agreement was how to divide the Colorado's water.

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[15] Quoted in Ibid., p. 87.

[16] Ibid., p. 92.

This problem was debated and argued for weeks before Hoover proposed a compromise solution. He pointed out that the basin was naturally divided by the canyon country of Northern Arizona and Southern Utah. Lee's Ferry, Arizona became the midpoint of the basin under Hoover's plan. The final agreement reached was a separation of the basin into an upper and lower section. The Upper Basin guaranteed that 75,000,000 acre feet of water would reach Lee's Ferry every ten year period.[17]

With this agreement the controversy was basically settled. It proved very important for the upper states because it allowed them to develop their uses for water as the need for it arose. They were not forced into development to protect water rights. It was estimated that at the time of the November 25, 1922 signing of the compact, that only one third of the allotment to the upper basin was being put to use. Thus, in theory, two-thirds of it would be available for future use.[18]

Many problems remained unsolved by the Compact. Mexican rights to the Colorado were basically ignored as were water rights guaranteed to Indians. The states were left to decide among themselves the specific allotment of water each was to receive. Added to these problems Arizona would not ratify the Compact until 1944 because she felt the upper basin was given too much and she feared losing rights to the Gila River[19] Nevertheless, the Colorado River Compact was of

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[17] Hundley, Dividing the Waters, p. 50.

[18] Hampton, "Seven State Irrigation Treaty," p. 997.

[19] Hundley, Dividing the Waters, p. 61.

extreme importance to Utah's future development of Colorado River waters. It guaranteed that as long as there was water in the river, Utah citizens would have rights to use their share.

CHAPTER V

FOUR NEW PROJECTS

With the fundamentals of interstate water rights settled, the possibilities of new development of Colorado Basin waters in Utah were much improved. Yet it was not until 1935 that another project was authorized. Paramount to this development was the passage of the National Industrial Recovery Act as part of Franklin D. Roosevelt's attempt to help the poor economic situation in the country. Passing Congress on June 16, 1933, the NIRA allocated funds to projects authorized and supervised by the Bureau of Reclamation un-er the Reclamation Act of 1902 and subsequent amendments.[1] Two developments, Moonlake and Scofield, became the first reclamation projects to be built in the Colorado Basin for the purpose of serving land within the basin itself. Two others, the Sanpete and the Duchesne Tunnel phase of the Provo River Project, were diversions of water from the Colorado Basin to the Great Basin. The discussion of the four projects developed below will be arranged chronologically rather than geographically.

The Moon Lake Project

The area served by the Moon Lake Project is located in Duchesne and Unita Counties in the Uintah Basin, and was part of the Uintah Indian

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[1] Golze, Reclamation in the United States, p. 106.

Reservation until 1905. Following the recommendation of Secretary of the Interior Caleb V. Smith, President Abraham Lincoln has reserved the entire area as an Indian reservation as early as 1861.[2] The terms of the original treaties promised the Indians that land in the Uintah Reservation would not be opened for settlement unless two-thirds of the male Indians voted in favor of it. But a drive spearheaded by Utah Senator Joseph L. Rawlins resulted in the passage of an act on May 27, 1902 which restored lands not put to use by the Indians to the public domain.[3] President Theodore Roosevelt issued a proclamation on July 14, 1905 which opened the Uinta Basin to white settlement under provisions of the 1902 law. The proclamation stipulated that registrations should be held at Vernal, Price and Provo, Utah, and at Grand Junction, Colorado, for those interested in acquiring the Uinta lands. After holding the registration, a drawing was to be held in Vernal to choose the order in which settlers could claim their areas of land.[4] By August 28, 1905 names had been drawn and whites were allowed to move onto the lands.[5]

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[2]A reprint of the official orders are in Mildred Miles Dillman, Early History of Duchesne County (Springville, Utah: Art City Publishing Company, 1948), p. 78.

[3]June Lyman and Norma Denver, compilers, Ute Indian People, An Historical Study (Salt Lake City: University of Utah, 1970), p. 34.

[4]Reprint of the Proclamation by President Theodore Roosevelt, 14 July 1905, concerning the opening of the Uintah Indian Reservation (unpublished), Utah State University Library, Special Collections.

[5]Salt Lake Tribune, 29 August 1905, p. 1.

Previous to 1905, the Bureau of Indian Affairs had built canals and ditches to Indian lands.[6] Many of these water works passed adjacent to white settlers' land, but whites were at first not allowed to use them. But because of the extreme shortage of water, whites organized what was called the Dry Gulch Irrigation Company, which was finally successful in persuading the government to let whites use water from Indian water works until farmers could build their own canals and ditches.[7] It was not long however before it became obvious that existing stream flow was not sufficient to irrigate both Indian and white lands. Several studies and reports were made on the area in an attempt to find potential solutions to the water problem. But it was not until 1934 that help finally arrived. Under terms of the NIRA, $1.6 million was made available through the Bureau of Reclamation for construction of a dam on the west fork of Lake Fork River for the purpose of storing water for use during the dry season. A canal system and Mid-view Dam and Dike were also features of the project. On June 22, 1934 a contract was executed between the Bureau of Reclamation and the newly formed Moonlake Water Users Association for repayment of construction costs.[8] June 28, 1935 ground breaking ceremonies were held at the dam site. Utah's governor Henry H. Blood and William R. Wallace, head of the Utah Water Storage Commission, were on hand to celebrate the

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[6]Department of Interior, Annual Reports, Indian Affairs, Part I, For the Fiscal Year Ended June 30, 1902 (Washington: Government Printing Office, 1903), pp. 352-353.

[7]Address by Caleb Tanner to the Third Annual Ugah Irrigation and Dra-nage Congress, 26 Januaryl1919, in Utah Irrigation and Drainage Congress, 1917-1920, p. 77.

[8]E. J. Westerhouse, "Moon Lake Dam and Reservoir; Moon Lake Project, Utah," Reclamation Era (August, 1938), p. 164.

event. Heavy snow in the area forced construction work to wait until Spring of 1936. The altitude and resulting cold weather in the area limited the working season to about 120 days. Thus the dam was not completed until May 29, 1938. When finished it had a height of 110 feet above the stream bed, was 1108 feet at its crest with a thickness at the bottom of 700 feet and at the top 35 feet.[9]

The Civilian Conservation Corp was mostly responsible for building the canal system and the Mid-view Dam and Dike. From their base camp in Heber City the CCC moved out in force, building the six mile Duchesne Feeder Canal in 1935. This system feeds water into the offstream reservoir held in place by the Mid-view Dam and Dike. The nine mile Midview Lateral, another canal built by the CCC, carries water from Midview Reservoir to Dry Gulch Canal which services Indian lands. Another feature is the twenty mile long Yellowstone Feeder Canal also built by CCC labor in 1935. It carries water from the East Fork of the Lake Fork River to the Uinta Basin. This water had previously been used on Indian land. Thus in effect an exchange of water was made possible by the creation of Mid-view Reservoir and the Canal system, as well as more becoming available during the dry season because of storage in Moon Lake.[10]

Benefits of the project are basically agricultural. Very bad farming conditions existed in the Duchesne and Uintah Counties before

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[9] R. H. Madsen, "Completion of the Moon Lake Project," Reclamation Era (February 1941), p. 33.

[10] U. S. Department of Interior, Bureau of Reclamation, Reclamation Project Data, 1961 (Washington: Government Printing Office, 1961), p. 530.

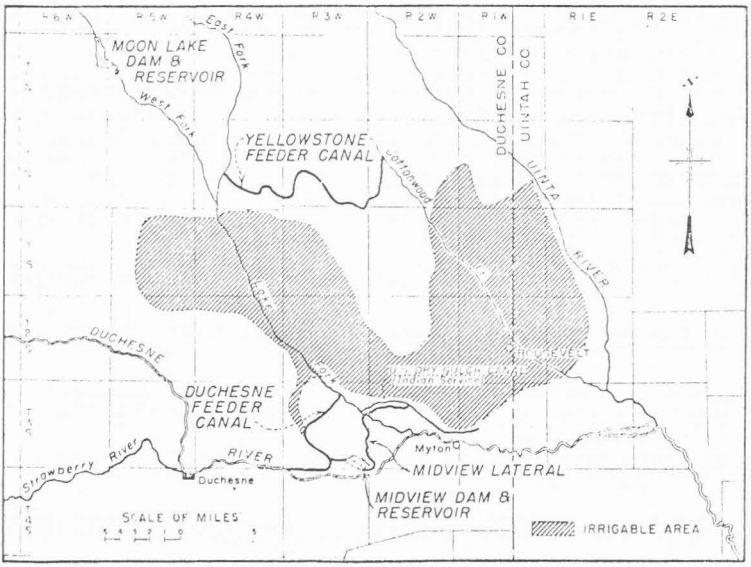

Figure 2. Moon Lake project. Map from Department of Interior, Reclamation Project Data, 1961.

the 1938 completion of Moon Lake Project. The area is basically dependent on a livestock economy, and the increased flow of water helped irrigate alfalfa and other hay which was used to feed cattle over the winter.[11] In 1971, 65,171 acres were provided supplemental water under the project.[12] This is just a small portion of area in the Uinta Basin in need of supplemental water. The Moonlake project was simply not large enough to meet all needs, resulting in continued study to find new sources of water. This effort contributed to the passage of the 1956 Colorado River Storage Act.

Aside from the agricultural benefits in the project area, fishing and boating are possible on Moonlake and Midview Reservoirs. Picnicking and camping are also possibilities for recreation in the area. The project however did not include production of electricity as one of its features.[13]

The Sanpete Project

The area served by the Sanpete project is located in the southern portion of the Great Basin. As a result the project requires a diversion of water from the Colorado Basin. White movement into the area first took place in 1849 when Chief Walker of the Ute Indians invited Mormon settlers to come to the "San Pitch" Valley to show the Indians

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[11] LeRoy C. Funk, "Annual Report of Extension Work, Agricultural Agent, Duchesne County, 1933" (unpublished), Utah State University, Special Collections, p. 1. Also Russell R. Ketch, "Annual Report of Extension Work, Agricultural Agent, Uintah County, 1936," p. 7.

[12] U. S. Department of Interior, Crop Report and Related Data, Statistical Appendix, 1971 (Washington: Government Printing Office, 1972), p. 125.

[13] U. S. Department of Interior, Reclamation Project Data, 1961, p. 529.

how to raise crops. With this invitation, the first group of whites moved into the area after leaving Salt Lake on August 20, 1849. The same fall fifty more families moved into the area. The agricultural pursuits of the white settlers followed the normal pattern of Mormon settlement. Irrigation was a necessity, and existing stream flow was soon put to use. By 1920, 77,616 acres were under irrigation in Sanpete County.[14]

Because the number of acres was too much for the natural stream flow in the area to adequately irrigate, steps were taken to find a supplementary supply of water. Water shortages occurred every year. As early as 1930 requests by citizens in the Spring City and Ephriam areas were made to get the Utah State Agricultural College to help investigate the possibility of diverting water from the Colorado Basin to their areas. Led by William Peterson of USAC and E. O. Larsen of the Bureau of Reclamation, a preliminary investigation was made on August 20 and 21, 1930.[15] The project was finally authorized in 1933 under the National Industrial Relations Act, but was not approved by President Franklin Roosevelt until November 6, 1935. The Ephraim Irrigation Company and the Horseshoe Irrigation Company contracted with the Bureau of Reclamation for repayment of construction costs of the entire project.[16]

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[14]Department of Commerce, Bureau of Census, Fourteenth Census of the United States Taken in the Year 1920, vol. 7: Irrigation and Drainage (Washington: Government Printing Office, 1922), p. 307.

[15]A Rasmussen, "Annual Report of Extension Work, Sanpete County, 1930," p. 9.

[16]U. S. Department of Interior, Reclamation Project Data, 1948, p. 397.

The project consisted of building two tunnels joining the two basins. The first to be constructed was called the Ephriam Tunnel, with the Morrison-Knudsen Company of Boise, Idaho receiving the bid for construction at a price of $162,434. Work was begun in the winter of 1935. By January 30, 1936 snow was so deep that activities had to be suspended. Because of complications the contractor was released of his contract and the Bureau of Reclamation took over.[17]

By November 22, 1936 the 7,113 foot tunnel was completely holed through. But because the material encountered in drilling was mostly shale, much of the tunnel had to be lined with cement. This operation was carried on from both the inlet and outlet. At the outlet, electric driven locomotives pulling mine cars loaded with three one sack batches took cement to the working area. The same process at the upper end of the tunnel was done by a horse pulling one mine car of cement. The CCC provided much assistance on the project which was completed in 1937, when the first water diverted from Cottonwood Creek, a tributary of the Green River, was sent into the tunnel. From there it entered into oak Creek, a tributary of San Pitch River.[18]

Work on the Spring City tunnel, the second feature of the project, was started on November 11, 1937. It too had to be lined with cement. Work continued on the tunnel through the winter of 1937. Because of heavy snows roads to the area were completely blocked, necessitating

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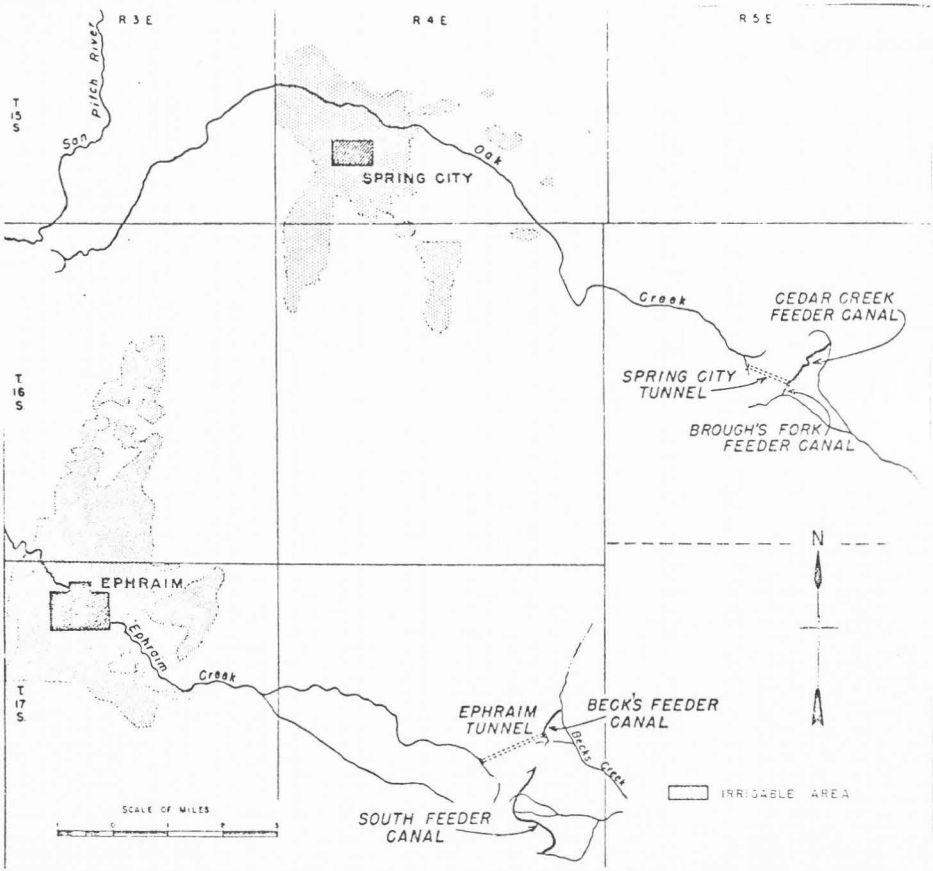
[17] Cecil Jacobsen, "Construction of Ephriam Tunnel," Reclamation Era (December, 1938), pp. 242-43.

[18] Ibid.

Figure 3. Sanpete project. Map from Department of Interior, Reclamation Project Data, 1961.


R3E
R4E
R5E
T 15 S
T 16 S
T 17 S
San Pitch River
Oak
SPRING CITY
Creek
CEDAR CREEK FEEDER CANAL
SPRING CITY TUNNEL
BROUGH'S FORK FEEDER CANAL
N
EPHRAIM
Ephraim
Creek
EPHRAIM TUNNEL
BECK'S FEEDER CANAL
Beck's Creek
SCALE OF MILES
SOUTH FEEDER CANAL
IRRIGABLE AREA

frequent trips to the town of Spring City by horsedrawn bobsleigh to obtain supplies. Water did not move through the tunnel until 1939.[19]

The only benefit of the Sanpete project was for agriculture. Again the water provided is strictly supplemental with no new land opened for settlement as a result. Crops in the area are grown basically to provide food for livestock. Alfalfa therefore comprises the largest amount of acreage of any single crop grown on the project. By 1971, 12,800 acres were provided a supplemental supply of water.[20] The extra water available since the project was completed has provided an "insurance policy" against lack of water for the area served. Yet total number of acres irrigated is only a small portion of the total in the county, a similar situation as existed with the Moonlake project.

The Duchesne Tunnel

The Duchesne tunnel is part of the much larger Provo River Project. The entire project serves Salt Lake, Summit, Utah and Wasatch counties. It was authorized on November 16, 1935 by President Franklin Roosevelt, with funds again make available to the Bureau of Reclamation as a result of the NIRA.[21] Construction of the Duchesne tunnel, which diverts water from the Duchesne River in the Colorado Basin to the Provo River in the Great Basin, did not start until November 9, 1940. The Uintah Construction Company was awarded a contract to construct the first

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[19] M. S. Ross, "Construction of Spring City Tunnel," The Reclamation Era (September, 1940), p. 26.

[20] U. S. Department of the Interior, Crop Report and Related Data, 1971, p. 135.

[21] U. S. Department of the Interior, Reclamation Project Data, 1948, p. 357.

three miles of the tunnel at a bid of $727,575. It was originally estimated that the total cost of the tunnel would be $2.1 million, a figure badly underestimating the eventual cost. Work continued around the clock, but because of very difficult material to drill into, only about twenty feet every twenty-four hours were actually excavated.[22] In 1942 the War Production Board ruled that construction on the tunnel should be stopped after two years and seventeen days of work. Just over two miles of the six mile, nine and one-half foot diameter tunnel had been completed.

It wasn't until 1949 that work was begun to complete the tunnel. Two companies, the Graffe-Callahan Construction Company and the Rhodes Brothers and Shafner Company were granted the bid totalling $4,379,961 to finish the work. Hardness of the rock encountered continued to be a major problem. Because of heavy snow outside the tunnel, snow sheds had to be built over mine car tracks from the tunnel mouth to the dumping area. This saved the contractors from having to remove snow from the tracks after every storm.[23] Finally on December 10, 1951 the tunnel was holed through. It is capable of carrying 600 cubic feet of water per second.[24]

Extra water provided the Provo River Project area by the Duchesne tunnel has benefitted agriculture by providing a supplemental supply. It also serves as a supplement to the domestic water supply of such

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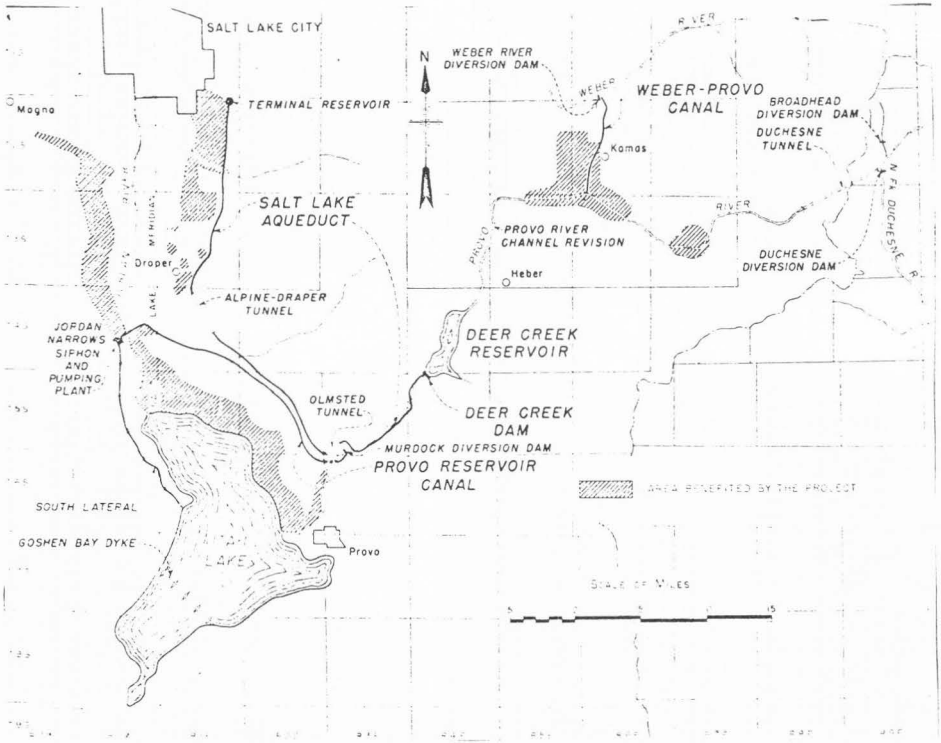
[22] N. L. Pope, "Drilling the Duchesne Tunnel," Reclamation Era (November, 1941), p. 271.

[23] "Difficulties of the Duchesne," Reclamation Era (April, 1951), pp. 88-89.

[24] Salt Lake Tribune, 11 December 1951, p. 17.

Figure 4. Provo River project. Map from Department of Interior, Reclamation Project Data, 1961.


SALT LAKE CITY
N
WEBER RIVER DIVERSION DAM
WEBER
RIVER
WEBER-PROVO CANAL
BROADHEAD DIVERSION DAM
DUCHESNE TUNNEL
Magna
TERMINAL RESERVOIR
Kamas
SALT LAKE AQUEDUCT
PROVO RIVER CHANNEL REVISION
PROVO
RIVER
N. FK. DUCHESNE R.
DUCHESNE DIVERSION DAM
Draper
Heber
ALPINE-DRAPER TUNNEL
JORDAN NARROWS SIPHON AND PUMPING PLANT
DEER CREEK RESERVOIR
OLMSTED TUNNEL
DEER CREEK DAM
MURDOCK DIVERSION DAM
PROVO RESERVOIR CANAL
AREA BENEFITED BY THE PROJECT
SOUTH LATERAL
GOSHEN BAY DYKE
Provo
SCALE OF MILES

cities as Salt Lake City, Provo and Orem. The Deer Creek Reservoir on the Provo River into which water from Duchesne tunnel eventually flows is also important as a boating and fishing area.[25]

The Scofield Project

The second reclamation endeavor in the Colorado Basin itself, the Scofield project, serves an area located in Carbon County. As was common with early settlement in the rest of the state of Utah, Carbon County settlers found that crops could not be grown without irrigation. Coal mining and the coming of the railroads to the areas furnished some impetus to agriculture. By 1888 the Price Water Company had organized to aid development of irrigation.[26] As agriculture expanded, the canal systems in the area began to combine and were extended until it was found that the natural stream flow of the Price River was insufficient to supply all needs of irrigation. In 1908 the Price Water Company started construction of Mammoth Dam on Gooseberry Creek, a tributary to Price River, located above the present Scofield Dam. Construction progressed very slowly, and in 1916 when only partially completed the dam washed out during the Spring run-off. Eleven thousand acre feet of water was released causing considerable flood damage.[27] This setback did not discourage the citizens of Carbon County. A new water company, the Price River Conservation District was formed in 1921.

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[25]Department of the Interior, Reclamation Project Data, 1961, p p. 616.

[26]Thursey Jessen Reynolds, compiler, Centennial Echoes from Carbon (Carbon County: Daughters of the Utah Pioneers, 1948), pp. 59-61.

[27]Department of Interior, Reclamation Project Data, 1948, p. 405.

This group directed the building of another dam in 1926, which partially washed out in 1928.

Due to the poor condition of the dam, a move was made to get help from the Bureau of Reclamation. Senator Abe Murdock of Utah urged Commissioner John C. Page of the Bureau to seek funds to repair the dam, which had been condemned several times by Utah engineers. The Denver and Rio Grande Railroad, which had tracks just below the dam, became worried as did citizens living in the river valley.[28] The Bureau of Reclamation prepared a study of the area in 1942. On June 11, 1943 the project was declared feasible and was authorized by President Franklin Roosevelt June 24, 1943. Funds were allocated for the project under terms of the Water Conservation and Utilization Act of August 11, 1939.[29] The Carbon County Water Conservancy District was organized in 1943 and signed a contract with the Bureau of Reclamation on February 28, 1944 for repayment of construction costs. The main incentive of the government for building Scofield Dam was to insure that floors would not wash out railroad and communication lines that were needed in the war effort.[30]

Construction of the new dam was begun on September 22, 1943. Contractor W. W. Clyde of Springfield, Utah had problems getting enough men to work on the project because of the man power shortage caused by

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[28] Salt Lake Tribune, 25 January 1942, p. 13A.

[29] Department of the Interior, Reclamation Project Data, 1961, p. 702.

[30] Ibid., p. 702.

World War II. Thus during the Spring of 1944 high school boys were trained for work on the project on Saturdays so as to be ready to begin work when school finished in June.[31] With the help of school boys and other expedients the dam was completed on November 8, 1945. It has a height of 145 feet, is 400 feet wide at the bottom and 30 feet wide at the top. Total length at the crest is 575 feet. Total cost of the project was $900,000 considerably higher than the original estimate of $640,000. Material and labor shortage lengthened the estimated time of construction by almost a year, which accounted for higher costs of supplies and wages for workers.[32]

The project is beneficial to agriculture as a supplemental supply of water to 14,000 acres. Livestock is the leading agricultural endeavor, thus a need for feed during the winter months is the reason alfalfa is the leading crop grown. Barley, wheat and oats are also raised in large quantities.[33] Scofield reservoir has become popular for boating and fishing. Boat races are held annually on the lake.[34]

All four of the projects discussed in this chapter were similar in that each provided supplemental supplies of water to lane already under cultivation. In this respect reclamation projects in Utah up to the 1940's had actually produced little in the way of new lands for agriculture. With the exception of Sanpete, each of the projects had

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[31] Salt Lake Tribune, 21 May 1944, p. 13A

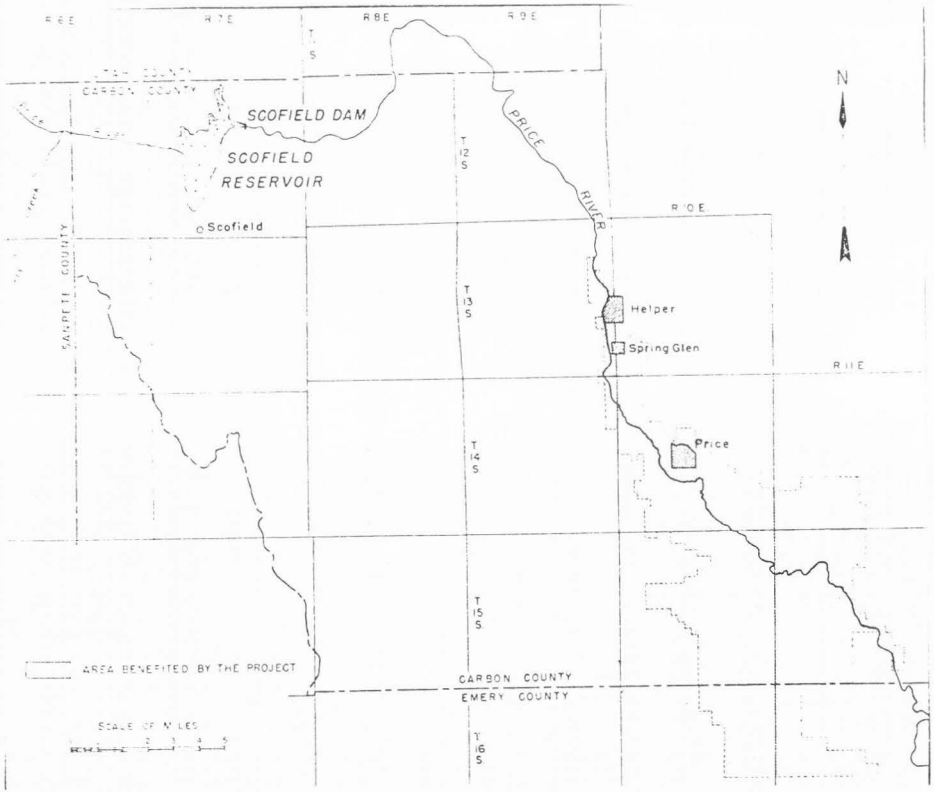
[32] Department of Interior, Reclamation Project Data, p. 703.

[33] Department of Interior, Crop Summary and Related Data, 1971, p. 136.

[34] Department of the Interior, Reclamation Project Data, 1961, p. 702.

multiple benefits. None, however, produced electricity. Although the Provo River Project does produce electric power, the Duchesne Tunnel diversion is only indirectly involved.

Figure 5. Scofield project. Map from Department of Interior, Reclamation Project Data, 1961.


R 6 E
R 7 E
R 8 E
R 9 E
T 11 S
SEVIER COUNTY
CARBON COUNTY
SCOFIELD DAM
SCOFIELD RESERVOIR
PRICE RIVER
T 12 S
R 10 E
Scofield
SANPETE COUNTY
T 13 S
Helper
Spring Glen
R 11 E
T 14 S
Price
T 15 S
AREA BENEFITED BY THE PROJECT
CARBON COUNTY
EMERY COUNTY
SCALE OF MILES
T 16 S
N

CHAPTER VI

THE COLORADO RIVER STORAGE ACT AND UTAH

As the projects described in the previous chapter were being built, plans were being made for more reclamation in Utah using waters of the Colorado River Basin. In 1938 the governors of the states of Utah, New Mexico, Wyoming and Colorado appointed a fact finding committee to study the potential of a comprehensive development of the Colorado River Basin's water. Governor Henry H. Blood of Utah appointed William R. Wallace and Grover A. Giles to represent the state on the committee whose purpose it was to secure data related to a comprehensive reclamation plan that could be turned over to the Bureau of Reclamation.[1] In 1946 the Secretary of the Interior published a comprehensive report on potential uses of the Colorado River that had been in the making for several years. The report identified 134 potential reclamation projects on the Colorado Basin. Of these 98 were in the upper basin, 30 in the state of Utah.[2] At about the same time the Bureau of Reclamation conducted a reconnaissance investigation of a proposed Colorado River-Great Basin Project which planned to divert water from a proposed reservoir on the Green River at Echo Park via a 230 mile long aqueduct.

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[1] "Report and Proceedings of the Fact Finding Committee of the Upper Colorado River Basin States," (unpublished), Utah State University Library, July 1938, p. 1.

[2] U. S. Department of Interior, The Colorado River, A Natural Menace Becomes a National Resource (Washington: U. S. Government Printing Office, 1946), pp. 3-5. Also found as House Document 419, 80th Cong., 1st sess., pp. 43-44.

This potential project became known as the Central Utah Project which later became a reality although not in the form originally conceived.[3] With the Great Basin Project getting more and more attention and potential reclamation projects being identified elsewhere in the state, it was not long until action was tkaen to get started. This action was taken on in two different forms. On the one hand Utah's leaders strongly backed the Central Utah Project. On June 7, 1946 Senator Abe Murdock of Utah introduced a bill which, if passed, would have authorized the Central Utah Project.[4] The bill had the solid support of Utah's other Senator Arthur V. Watkinds, and of Utah Representative William A. Dawson who had pledged to support it as early as December 1946.[5] The movement for the Central Utah Project was still strong in 1948. In January of that year Senator Watkins introduced a bill which would have authorized it.[6] Also in 1948, Representative Walter K. Granger of Utah made a speech in the House of Representatives strongly supporting a similar bill that had been introduced to that body of the legislature. He outlined the major project features which were to include Flaming Gorge Dam on the Green River near Wyoming, Echo Dam and an enlargement of Strawberry Reservoir.[7] Thus Utah's own initiative was one form of action.

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[3] U. S. Department of Interior, Bureau of Reclamation, "CUP History" Unpublished report on the history of the Central Utah Project by ghe Bureau of Reclamation, Region 4, Central Utah Projects Office, Provo, Utah, p. 2.

[4] Salt Lake Tribune, 8 June 1946, p. 1.

[5] Salt Lake Tribune, 21 December 1946, p. 7.

[6] Salt Lake Tribune, 30 January 1948, p. 4.

[7] U. S. Congress, House, Appendix to the Congressional Record, 80th Cong., 2d sess., p. A3693.

The other action took on a much larger scope and was led by people of the entire Upper Colorado Basin. For several years there had been envisioned the comprehensive development of the water resources in the upper basin. With failure of any action taken by Congress on the Central Utah Project, it was into this larger movement that Utah's leaders began to invest their energies. In fact Senator Arthur V. Watkins became one of the most influential if not the most influential leaders of the movement that eventually secured the passage of the Storage Act. This is not to say that work was not continued on gaining the Central Utah proposal, but that project and other projects were pushed within the context of the much larger proposed Storage Act which would in the end benefit several states.

One problem however had to be ironed out among the upper states before any large scale development, such as the Storage Act entailed, could be achieved. As mentioned in Chpater II, the Colorado River Compact of 1922 divided the waters of the Colorado River according to basin only. Specific amounts of water were not allocated to each state. To solve the problem commissioners were appointed from the states of Utah, Colorado, Wyoming, New Mexico and Arizona who were to meet for the purpose of coming to an agreement regarding allocation of water in the upper basin. State Engineer Ed. H. Watson represented Utah. A delegate was also appointed to represent the United States. The first meeting of the Upper Colorado Compact Commission took place on July 31, 1946. It was not until October 11, 1948 that a compact was agreed upon.[8]

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[8]"Record, Upper Colorado River Bas-n Compact Commission," Unpublished minutes of the commission meetings, Utah State University Library, p. i.

The most significant feature of the agreement was the assignment of a specific amount of water to each state. Of the 7,500,000 acre feet per year that was the upper basin's share in the Colorado River Compact of 1922, Colorado got 51 percent, New Mexico 11.25 percent, Wyoming 14 percent and Utah 23 percent with Arizona guaranteed 50,000 acre feet of water per year. Also of importance was the fact that the Upper Colorado River Commission was established as a permanent body.[9] This commission was eventually to work hand-in-hand with the Bureau of Reclamation in gaining approval of the Colorado River Storage Project.

With the cooperation of the Upper Colorado River Commission, the Bureau of Reclamation formulated a plan for the Storage Project. This plan was submitted for the scrutiny of Congress in 1950. The original plan was quite similar to the one that was eventually accepted, except that it included the long talked about Echo Dam which was later deleted in favor of Flaming Gorge Dam.[10]

The proposal for the construction of the far reaching Storage Project came to be the center of much controversy in the 1950's. The primary objection was aimed at the building of Echo Park Dam, which was to have been built in Echo Park near Dinosaur National Monument. Conservation groups were aghast at the possibility that the national monument would be covered with water. Yet Echo Dam was a key feature of the proposed Central Utah Project.

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[9] A copy of the Upper Colorado River Compact is located in the Utah State University library, Special Collections.

[10] U. S. Department of the Interior, Bureau of Reclamation, Colorado River Storage Project and Participating Projects (Salt Lake City: Region IV of Bureau of Reclamation, 1950), p. 32.

Adding fuel to the fired up controversy were states of the lower Colorado Basin, especially California. Californians had gone so far as to raise fears among cotton growers in the southern United States by claiming that cotton would be grown on lands in Utah as a result of the project.[11] Both Utah members of the House of Representatives, William A. Dawson and Henry A. Dixon, severely criticized what they called California's selfish attitude concerning the Colorado Storage proposal. Senator Watkins had an editorial from the Deseret News printed in the Congressional Record which had quotes of a Southern California water association manager who had said that the Storage Act would threaten California's rightful share to the water.[12] As Senator Watkind pointed out, this claim was sheer nonsense, since water rights had been determined by the 1922 Colorado River Compact. Watkin's argument was that California and Arizona had for years usurped water that rightfully belonged to the upper basin. The upper basin had been insufficiently developed to put it to use. The Colorado Storage Project however would put to use much of the upper basin's share and California saw this as a threat to her water supply. Thousands of dollars were spend for lobbyists who worked against the project which had been presented to Congress in the form of a bill.[13]

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[11] Salt Lake Tribune, 14 July 1955, p. 1.

[12] U. S. Congress, Senate, Congressional Record, 83rd Cong., 2d sess., p. 10777.

[13] Salt Lake Tribune, 4 March 1956, p. 14.

One thing that helped the project was the support it received from President Dwight Eisenhower.[14] Local groups were organized to support the project. A group that became known as the Aqualantes were formed in the states of Utah, Wyoming, Colorado and New Mexico to support and publicize the campaign for Congressional approval of the storage bill. A group called the Upper Colorado Grass Roots, Inc., was also organized to help promote the project.[15] Utah Governor J. Bracken Lee joined governors of the other three states in proclaiming February 13-19, 1955 as Colorado River Week which was designed as a movement to combat conservation organizations and others who opposed the storage bill.[16]

After much clamor and debate, the Colorado River Storage Bill reached the floor of the Senate for vote on April 20, 1955 and was easily passed by a vote of 58-23. This senate bill still included Echo Dam as a feature of the project.[17] But in the House of Representatives a real fight was in progress. By November of 1955, Senator Watkins, who realized that the biggest obstacle to passing the bill in the House was the Echo Dam feature, recommended that it should be dropped from the project.[18] On November 29, 1955 the Department of the Interior announced that it would remove Echo Dam as a feature of the Storage Project.[19] Actually Senator Watkins had made an astute political

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[14]"At Last A Harness for the Upper Colorado," Business Week (10 March 1956), p. 24.

[15]Salt Lake Tribune, 9 January 1955, p. B1.

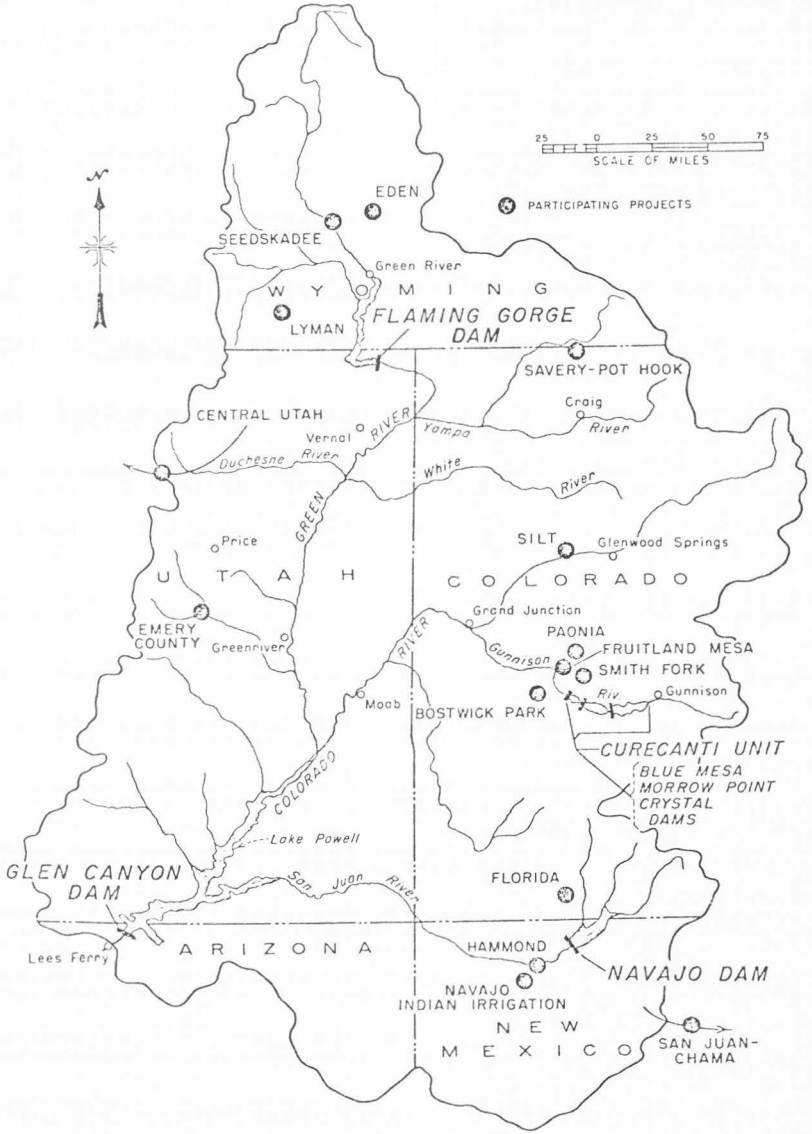
[16]Salt Lake Tribune, 13 February, 1955, B1.

[17]Salt Lake Tribune, 21 April 1955, p. 1.

[18]Salt Lake Tribune, 1 November 1955, p. 1.

[19]Salt Lake Tribune, 30 November 1955, p. 1.

Figure 6. Colorado River Storage project location map. Map from Department of Interior, Reclamation Project Data, 1961.


25 0 25 50 75
SCALE OF MILES
PARTICIPATING PROJECTS
EDEN
SEEDSKADEE
Green River
W Y O M I N G
LYMAN
FLAMING GORGE DAM
SAVERY-POT HOOK
Craig
CENTRAL UTAH
Vernal
RIVER
Yampa
River
Duchesne River
White
River
GREEN
Price
SILT
Glenwood Springs
U T A H
C O L O R A D O
Grand Junction
EMERY COUNTY
Greenriver
PAONIA
FRUITLAND MESA
Gunnison
SMITH FORK
Moab
BOSTWICK PARK
Gunnison
CURECANTI UNIT
BLUE MESA
MORROW POINT
CRYSTAL
DAMS
COLORADO
Lake Powell
GLEN CANYON DAM
San Juan River
FLORIDA
Lees Ferry
A R I Z O N A
HAMMOND
NAVAJO DAM
NAVAJO INDIAN IRRIGATION
N E W
M E X I C O
SAN JUAN-CHAMA

move, for on March 1, 1956 the House of Representatives passed its version of the Colorado River Storage Act.[20]

Not enough can be said for the work of Utah's legislators in Washington D. C. in getting the Colorado River Storage Act passed. A Washington observer of the Congressional scene reporting to the Salt Lake Tribune gave Senator Arthur V. Watkins much of the credit for overcoming California's lobbyists. He was able to convince members of the Senate that they were using "big lie" tactics. Senator Wallace F. Bennett was given much credit in gaining important votes for the bill as were Representatives Dawson and Dixon, who both worked long and hard to win votes for it in the House.[21] These men were very effective in helping to get the Storage Act passed. Senator Watkins was perhaps the most significant person in the entire movement. He showed an outstanding ability in dealing with those forces who worked against the act. He was completely dedicated to the goal of passing the act which he felt would be of great benefit to the people he represented.

The Storage Act itself is a huge project. It authorized the construction of four storage units in the upper basin. Two of these, the Flaming Gorge Dam and Reservoir and the Glen Canyon Dam which backs up water forming Lake Powell, are located in part within the state of Utah. Both bodies of water formed by the huge dams provide much in the way of recreation. Also both of these features of the project include

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[20] Salt Lake Tribune, 2 March 1956, p. 1.

[21] Salt Lake Tribune, 4 March 1956, p. 14.

facilities to produce electrical power. The Storage Act also called for eleven participating reclamation projects. Five were in Colorado, three in Wyoming, one in New Mexico and two in Utah. Although two of the original eleven were later found infeasible and deleted from the plan, construction was begun on the two Utah projects, the Emery County Project and the long talked of Central Utah Project.[22]

The Emery County Project is located entirely within the Colorado Basin in east-central Utah. The idea of putting a dam on Cottonwood Creek a tributary of the San Raphael River which flows through the county, was conceived as early as 1893. In that year the minutes of the Cottonwood Creek Irrigation Company mention a proposed dam on the Creek.[23] In 1947 investigative work was done to see if such a proposal could be accomplished.[24] The need for a project in the area is clearly shown in a report by the county extension agent in 1955. In that year approximately three million pounds of supplemental feed had to be purchased by livestock producers because of drought conditions.[25] With the passage of the Colorado River Storage Act the Emery County Project was finally authorized. The Storage Act authorized the building of

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[22]U. S. Department of Interior, Bureau of Reclamation, Technical Record and Design of Construction, Glen Canyon Dam and Power Plant (Denver, Colorado: Government Printing, 1970), p. 3. The publication provides a description of the entire Colorado River Storage Project and its history.

[23]Salt Lake Tribune, 8 July 1966, p. B7.

[24]Salt Lake Tribune, 28 December 1947, p. B1.

[25]Gordon Beckstrand, "Annual Report of the Extension Service, Agricultural Report, 1955," (unpublished), Utah State University library, Special Collections, p. 1.

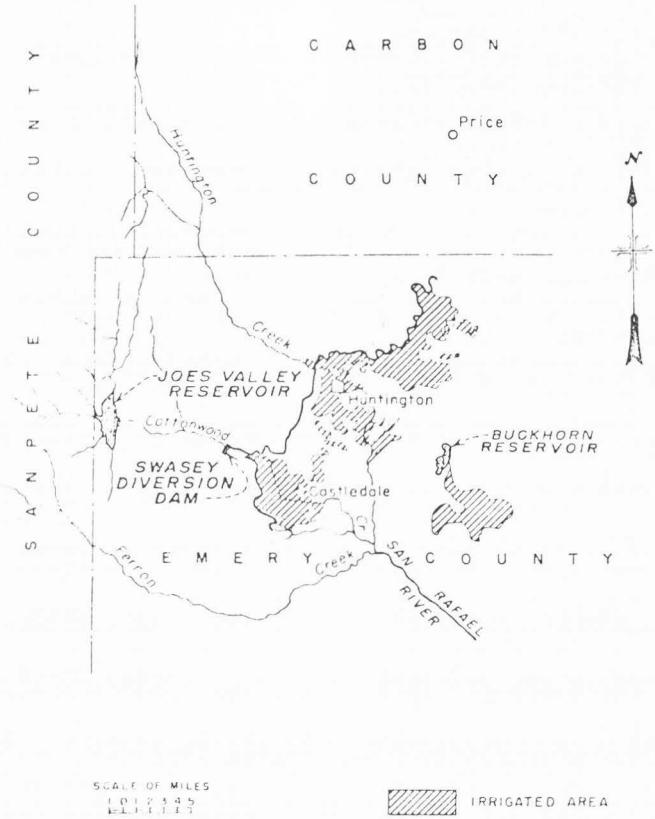

Figure 7. Emery County project. Map from Department of Interior, Reclamation Project Data, 1961.

projects, however it did not authorize the money to build them. Thus construction of the major feature of the project, Joe's Valley Dam on Cottonwood Creek was not begun until June 20, 1963. Other features included the Swassey Diversion Dam also on Cottonwood Creek, the Cottonwood Creed Huntington Canal which carries water from Cottonwood Creek to the Huntington North Reservoir, and the Huntington North Service Canal which extends from the reservoir into the project lands. On July 7, 1966 the project was completed, nearly 1-1/2 years ahead of schedule. Principal speakers celebrating the completion were Utah's Senator Frank Moss and Representative Laurence J. Burton.[26]

Benefits of the project are mostly agricultural. Original estimates by the Bureau of Reclamation were that 24,000 acres could be irrigated. Of this amount 3,600 acres were to have been newly irrigated.[27] However statistics published in 1971 show only 18,775 acres under irrigation, all of it supplemental. Because livestock is the most important agricultural activity in the area, most of the crops grown are hay and other feed crops.[28] Thus as has been the case on most other Utah reclamation projects, benefits have been for supplemental irrigation, not opening new lands for production. The Emery County Conservancy District signed a contract to repay the government the $11,069,384 that it took to construct the irrigation facilities. One other benefit besides

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[26] Salt Lake Tribune, 7 July 1966, p. 8B.

[27] Bureau of Reclamation, Reclamation Project Data, 1961, p. 220.

[28] U. S. Department of Interior, Bureau of Reclamation, Federal Reclamation Projects, Water and Land Resource Accomplishments, Statistical Index (Washington: Government Printing Office, 1971), p. 115.

those for agriculture is the recreational potential provided by the reservoirs of the project. In 1970 approximately 113,000 people took advantage of the boating, fishing and picnicking opportunities provided at the reservoirs.[29]

The Central Utah Project, the second of Utah's participating projects of the Colorado Storage Act is by far the largest planned Federal Reclamation project in the state's history. The word planned is used because the project is not close to completion. The entire project calls for a comprehensive development of Colorado River waters for irrigation, domestic and industrial use. If and when it is completed it will benefit more people than any previous reclamation project in the state. The benefits to the land which this paper is most interested in was originally divided into four separate units. These were the Vernal, Jensen, Ulpalco and Bonneville units. In 1968 the Uintah unit was also authorized. The Ute Indian Unit is still in the proposal state but would be the sixth part of the Central Utah Project if approved.[30]

The Vernal Unit is the only unit to have been completed at this time. Waters from Ashley Creek are diverted by the Thornburgh Diversion Dam into the Offstream Steinaker Reservoir whose waters are held back by Steinaker Dam. These waters are released during the irrigation season to provide water for approximately 15,000 acres, none of which

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[29] U. S. Department of Interior, Bureau of Reclamation, Summary Report of the Bureau of Reclamation, 1970, Statistical and Financial Appendix, Part IV (Washington: Government Printing Office, 1970), p. 89.

[30] U. S. Bureau of Reclamation, "Central Utah Project" (unpublished report), Provo, Utah, June 1972, p. 1.

was newly irrigated land.[31] The area served is in the Uintah Basin in Dechesne County not a great distance from lands of the Moon Lake project. Funds were first granted to start the project in August of 1958. To celebrate the occasion citizens of Vernal held a four mile long parade on August 22, 1958. Governor George D. Clyde spoke at a short ceremony held after the parade as did B. H. Stringham, one of the first men in the Uintah Basin with the courage to talk of the Vernal Project.[32] With the completion of the 11.8 miles Steinaker Service Canal in 1961, the Vernal unit was completed. The Uintah Water Conservancy District signed a repayment contract with the government for the estimated 8.9 million dollar construction cost. Benefits of the unit are almost entirely in the form of water for irrigating crops which are fed to livestock, although some municipal water is provided to the twon of Vernal because of the project.[33] In 1970, 23,100 people used Steinaker Reservoir for recreational purposes, an added benefit of the unit.[34]

The Bonneville unit is the only other of the authorized units on which construction has begun. On March 2, 1965 the Central Utah Water Conservancy District was established as the legal agency to represent

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[31]U. S. Department of Interior, Bureau of Reclamation, Steinaker Dam, Technical Record of Design and Construction (Denver, Colorado: Government Printing Office, 1963).

[32]Salt Lake Tribune, 23 August 1958, p. 15.

[33]U. S. Department of Interior, Bureau of Reclamation, Repayment of Reclamation Projects (Washington: Government Printing Office, 1972), p. 65.

[34]U. S. Bureau of Reclamation, Summary Report of the Commissioner, p. 43.

the people of the project area. Seven counties made up the original district. These included Summit, Wasatch, Uintah, Salt Lake, Duchesne, Juab and Utah counties. In 1967 the District approved the inclusion of five additional counties including Fairfield, Millard, Piute, Sanpete and Sevier counties. Cost of the project estimated at 1963 prices will be about $324,000,000 if the unit is completed.[35]

Because of the comprehensiveness of the project, construction progress has taken place in many areas. Starvation Dam was one of the first features completed. It is located on the Strawberry River, but receives additional water from a one mile long tunnel that connects the reservoir with the Duchesne River. Water from the Duchesne is diverted into the tunnel by Knight Diversion Dam. Storage behind Starvation Dam was begun in November 1969. A huge mechanical mole was used to drill the tunnel.[36]

Work has been progressing on the enlargement of Strawberry Reservoir. The new Soldier Creek Dam was "topped out" in November 1972 and will hold the water in the much enlarged reservoir. A 37 mile long aqueduct system being built to intercept the flows of eight streams in the Uintah Basin, will, when complete, divert the water from those streams to the Strawberry Reservoir. On March 12, 1970 after 16 months of drilling, the mechanical mole used on the Starvation Tunnel completed

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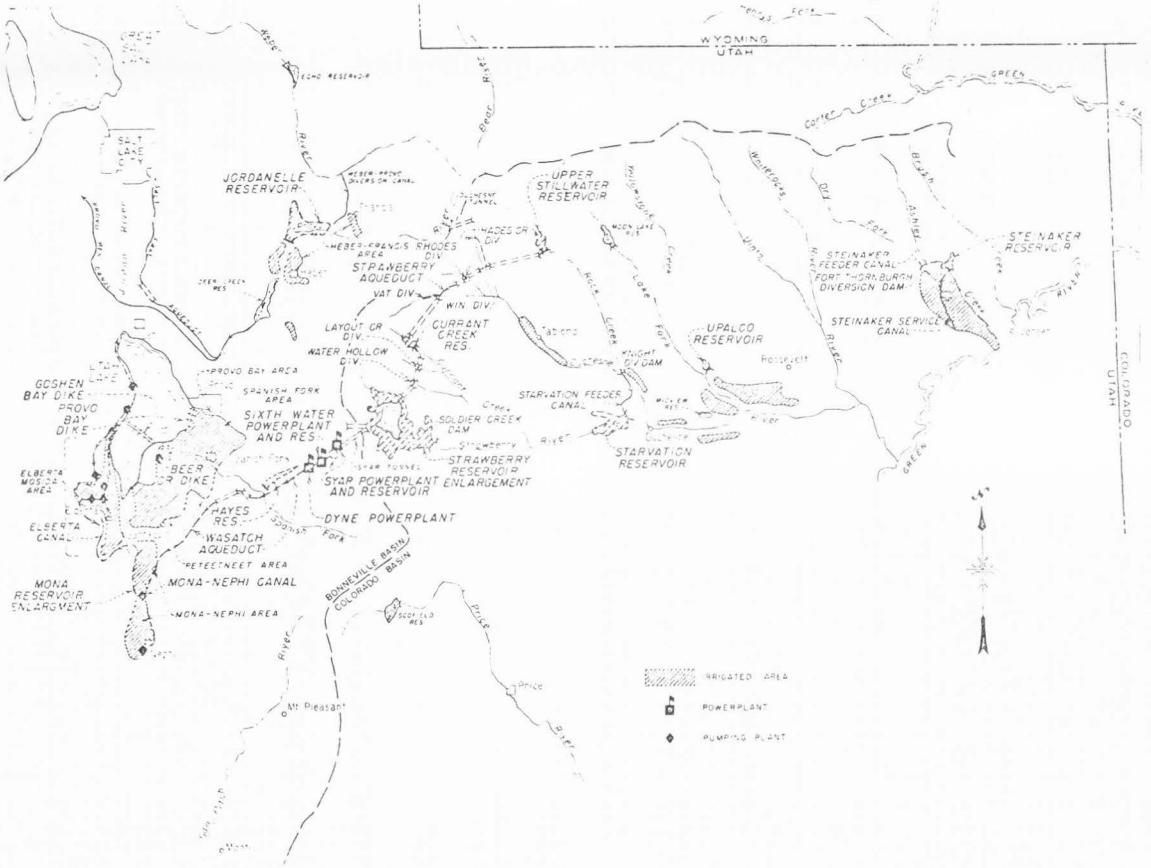
[35]Bureau of Reclamation, "Central Utah Project, History," p. 7.

[36]Salt Lake Tribune, 12 November 1969, p. 9.

Figure 8. Central Utah project. Map from Department of Interior, Reclamation Project Data, 1961.


WYOMING
UTAH
COLORADO
UTAH
GREEN
Coffee Creek
SALT LAKE CITY
ECHO RESERVOIR
WEBER
BEAVER
JORDANELLE RESERVOIR
WEBER-PROVO DIVERSION CANAL
UPPER STILLWATER RESERVOIR
DUCHESNE
RHODES CR DIV
WEBER-PROVO AREA
STRAWBERRY AQUEDUCT
VAT DIV
WIN. DIV.
CURRANT CREEK RES.
LAYOUT CR DIV.
WATER HOLLOW DIV.
PROVO BAY AREA
SPANISH FORK AREA
GOSHEN BAY DIKE
PROVO BAY DIKE
SIXTH WATER POWERPLANT AND RES.
SOLDIER CREEK DAM
STARVATION FEEDER CANAL
STARVATION RESERVOIR
STRAWBERRY RESERVOIR ENLARGEMENT
SYAR POWERPLANT AND RESERVOIR
DYNE POWERPLANT
BEER DIKE
ELBERTA MODAN AREA
ELBERTA CANAL
HAYES RES.
WASATCH AQUEDUCT
PETEETNEET AREA
MONA RESERVOIR ENLARGMENT
MONA-NEPHI CANAL
MONA-NEPHI AREA
BONNEVILLE BASIN
COLORADO BASIN
SCOFIELD RES.
Mt. Pleasant
Price
UPALCO RESERVOIR
KNIGHT DIV. DAM
STEINAKER RESERVOIR
STEINAKER FEEDER CANAL
FORT THORNBURGH DIVERSION DAM
STEINAKER SERVICE CANAL
IRRIGATED AREA
POWERPLANT
PUMPING PLANT

the 4.1 mile Water Hollow Tunnel, which is the first phase of the aqueduct system to be completed. It connects Water Hollow Creek to the Strawberry Reservoir.[37] Some work is presently being done within the Bonneville Basin itself. Construction on the Jensen, Upalco and Uintah units awaits funds from the government.

Because work is not finished on several of the units there is no way to evaluate the benefits the project has had in them. Many agencies have made estimates of the benefits that will come, but these are of little menaing to this paper which is more concerned with the actual benefits. It is quite obvious that the entire story of the Central Utah Project is to be told some time in the future.

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37 Salt Lake Tribune, 13 March 1970.

CHAPTER VII

CONCLUSION

Amazing progress has been made in Utah's use of waters from the Colorado River since the 1902 Reclamation Act. Thousands of acres of farmland have received increased amounts of water. This has been of tremendous benefit to agriculture, Utah's largest industry. The fact is, however, that up to this time use of the Colorado River for reclamation has not opened up huge areas of new land for settlement. Only the Strawberry Valley project opened up a sizable amount of new land. Even there the newly irrigated land amounted to only 3,400 of the approximately 48,000 acres irrigated. One explanation for this is the Mormon tradition of irrigation. New settlements were made in areas because the Mormons knew how to irrigate the lands that otherwise would have been quite unproductive. But many of these areas soon found that natural stream flow was insufficient to meet their needs, which resulted in several movements to petition the Bureau of Reclamation for help in building projects which would supplement natural supplies. It seems that this has been the pattern of reclamation at least in using the waters of the Colorado River. There is no intent here to be critical. It is quite reasonable that government should first help those in need before trying to open new areas. Thus reclamation projects have been quite beneficial for Utah's agriculture. A good indication of the success of various projects is that all Federal repayment schedules are

presently up to date on the projects we discussed in this report.[1] It is apparent that Utah's farmers are making the projects a success.

Agriculture had certainly not been the only benefit of reclamation. The Colorado River is blessed with many good sites for dams that produce electricity. This has become one of the most important features of recent projects such as the comprehensive Colorado River Storage Project. The production and sale of electrical power has provided a big boost in repaying the government for construction costs. Glen Canyon and Glaming Gorge Dams are a good example of the progress along these lines that have been made since the early Strawberry Project. Plans are for the production of much electrical power in the Central Utah Project.

Other benefits such as recreation have also been important. The reservoirs impounded behind storage dams made good fishing, boating and picnicking areas. Most of Utah's projects have included some sort of recreation benefits. Strawberry Reservoir has long been one of the hottest fishing spots in the state. A further benefit has been increased availability of domestic and industrial water. This was seen especially in the Duchesne Tunnel feature of the Provo River Project, and is a big part of the Central Utah Project. Although benefits have come from reclamation through the use of Colorado River water in Utah, much controversy has taken place because of reclamation projects. For the most part these controversies have been at the national level

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[1]Bureau of Reclamation, Repayment of Reclamation Projects.

or between the states. The Reclamation Act itself was marked with controversy. The Colorado River Compact was certainly the result of a controversial situation and the Colorado River Storage Act was the center of much argument. All of the above were eventually worked out. Utah today however is faced with a controversy which is not national or interstate, but is centered within the state itself. Environmental groups have been the leaders of the opposition to the Central Utah Project. They claim that construction work is causing problems with the environment in many forest areas. The claim has also been made that changes in stream flow had adversely affected conditions for fish. It is altogether conceivable that the Bonneville unit will not be completed. The National Environment Policy Act of 1969 will play a key role in the final decision. It states that a systematic and interdisciplinary approach must be used in planning and making decisions concerning any construction that may have an impact on man's environment.[2] The Bureau of Reclamation claims that the "Tempo of Bonneville Unit construction progress is being seriously retarded by the time consuming procedure of preparing and reviewing environmental impact statements."[3] Several agencies have prepared impact statements, such as the Bureau of Reclamation, the U. S. Forest Service and the Utah State Division of Wildlife Resources. All of these are subject

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[2]Part A of Section 102 of the National Environmental Policy Act found in U. S. Congress, House, Appendix to Hearings Before the Sub-Committee on Merchant Marine and Fisheries, 91st Cong., 2d sess., 1971, p. 2.

[3]Bureau of Reclamation, Central Utah Project, History, p. 10.

to review of the National Environmental Committee which makes the final decision on a proposed project.

Another problem which exists in the Central Utah Project is that water will be diverted from areas of the Uintah Basin that for years has been held under Indian Water rights. In 1905 legislation by Congress guaranteed to the Indians rights to water that they had already accrued in the Uinta area.[4] The Indians have agreed to allow water to be diverted from their areas, but what problems arise from this remains to be seen.[5]

Obtaining funds from Congress has also been a problem, especially in recent years where projects have been authorized but money is not always forthcoming. All of the units except Vernal have been plagued with this problem. The Dixie Project neat St. George in Southwestern Utah is a good example of this. It was authorized by Congress in 1964 after many years of study, reauthorized in 1968 at an increase from a total cost of $47,500,000 to $58,000,000.[6] Yet Congress has not provided enough funds to get major construction started.

Thus problems and controversy exist. What happends in the future is difficult to predict. The fact remains that Utah still is not putting to use nearly all of the potential provided by the Colorado River.

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[4]U. S. Congress, House, Annual Report of the Department of Interior, Indian Affairs, H. Doc. 5, 59th Cong., 1st sess., p. 466.

[5]Bureau of Reclamation, "Central Utah Project, History," p. 8.

[6]U. S. Department of Interior, Bureau of Reclamation, Reclamation Project Feasibilities and Authorizations, 1968 (Washington: Government Printing Office, 1968), p. 322.

The plans have been made to use that potential, but whether or not they will become a reality is a story for the future.

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